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ON THE

DIAGNOSTIC SIGNIFICANCE OF ABDOMINAL PAIN IN CHILDHOOD.*

BY

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ABDOMINAL pain in a child must always be a source of anxiety to the doctor. It may mean so little or so much. It may be due to nothing worse than an attack of acute indigestion set up by a green apple; or it may indicate an attack of acute peritonitis set up by a green and gangrenous appendix. It is a matter, therefore, which craves wary walking in diagnosis, for a mistake may be fatal, and between one's anxiety not to overlook a serious cause and one's natural reluctance to alarm the parents unduly it is often difficult to steer a proper course. Our difficulty in these cases is increased by the fact that pain may be the sole symptom of abdominal disease, and the little patient may be unable to help us, as an adult can, by describing its exact situation, character, and so forth, which are often so significant for diagnosis. It seemed, therefore, that we might profitably employ our time this afternoon by considering together the chief causes of abdominal pain in childhood, with a view to enabling us, when we meet such cases, to make a diagnosis by the method of exclusion if no other is available.

EXTRA-ABDOMINAL CAUSES OF PAIN.

At the outset it is well to remember that pain felt in the abdomen is not necessarily being caused there. In children, who localize their sensations badly, these extra-abdominal causes of pain are specially apt to lead to error. We may divide them according as the cause has its seat (1) in the abdominal wall, using that term in its widest sense, or (2) in the thorax.

1. *Causes in the Abdominal Wall.*

Spinal Caries.—Of causes situated in the abdominal wall this is one of the commonest. The pain in such cases is due, of course, to pressure on the posterior nerve roots, and is usually referred along the lower intercostal nerves to the epigastrium. It may come on quite early in the disease before any gross spinal deformity has shown itself, and the child will be brought to you under the belief that he is suffering from some abdominal trouble. It is well, therefore, to make it a rule carefully to examine the back in all cases of chronic epigastric pain in children. Slight prominence of one or more vertebral spines in the lower dorsal region can usually be detected, with tenderness on percussion over them and some stiffness on stooping. If in doubt, one can call in the help of the radiographer.

Lateral curvature in its more pronounced degrees is a similar source of error, but is less likely to be overlooked.

Rheumatism, or perhaps one should call it fibrositis, affecting the abdominal muscles, may easily simulate pain of intra-abdominal origin, and, like all rheumatic manifestations, is relatively common in childhood. It may be met with either at the insertion of the muscles into the ribs or iliac crests or in the aponeurotic sheaths of the muscles themselves. The well-known "stitch in the side" which is common in children may, perhaps, be of this nature, but it is also met with in a chronic and protracted form. Fibrositis may be distinguished by the fact that the pain comes on when the affected muscle is thrown into action, as, for example, when the patient tries to sit up in bed without using the hands; there is often quite acute tenderness at certain parts of the abdominal wall, especially when the muscle is contracted, and if the abdomen is palpated in the ordinary way this may be mistaken for tenderness of an underlying organ. This error may be avoided by noting that tenderness is also elicited when the abdominal wall is grasped or compressed laterally. This form of pain is commonest in children of school age, and often follows hard exercise, and if the muscles of the right lower quadrant are involved appendicitis may be simulated. One sometimes wonders whether cases of so-called "rheumatic appendicitis" cured by salicylates are not really of this nature.

Herniae through the abdominal wall are not such a common cause of obscure chronic abdominal pain in the child as they are in the adult; but in the form of omental herniae especially they should always be thought of, and so should the possibility of an *undescended testis*.

Hip disease I have sometimes known to lead to error; not so much tuberculous hip disease as an acute inflammatory condition in or near the joint. This may cause pain referred to the lower part of the abdomen; there may be fever and the child may lie with the legs drawn up; and when the right hip is affected simulation of appendicitis may be fairly close. The limitation of movement in the joint which careful examination reveals ought, however, to keep one right.

Herpes zoster is the last of the causes in the abominal wall which I shall mention. Pain in this affection may precede the appearance of the eruption by some hours or even days, and be of considerable severity; and I have known more than one instance in which it led to a diagnosis of acute abdominal disease. It can be distinguished by the fact that there is a band of superficial hyperaesthesia in the distribution of the affected nerve, that there is also severe pain behind, near the vertebral spines, and that deep tenderness on palpation or involuntary rigidity are absent. All doubts are dispelled before long by the appearance of the eruption.

2. *Thoracic Causes.*

The possibility of abdominal disease being simulated by acute intrathoracic conditions has been well recognized ever since attention was first directed to it by the late Mr. Barnard some years ago. Yet mistakes are still easy to make. The commonest form of error is to diagnose a case of pneumonia occurring at the right base as one of appendicitis. If the patient is a child, such an error is specially excusable, for in the child, more even than in the adult, the physical signs of a pneumonia may be entirely absent for some time after the disease has begun. Furthermore, vomiting is a very constant and conspicuous feature of early pneumonia in childhood, and helps still further to simulate the picture of abdominal disease. The abdominal pain in these cases is due, as you all know, to involvement of the lower intercostal nerves as they pass through the diaphragm, and in part also it may be a "referred pain." There is reason to believe that it only occurs when the diaphragmatic pleura is affected. Be this as it may, the

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combination of an acute onset, with fever, vomiting, pain referred to the lower abdomen, and some abdominal rigidity, coupled with an absence of the usual signs of pneumonia, may be deceptive in the highest degree. In attempting to make a diagnosis in such a case you will look for an alteration in the pulse-respiration ratio, though it is well to remember that the respiration is not always hurried at the onset of pneumonia in a child. You will note that the abdominal tenderness is superficial, and that there is no sign of pain on moderately firm deep palpation. You will also ascertain the presence or absence of tenderness in the recto-vesical pouch on examination by the rectum, although perhaps it is true to say that in the child this is more easily said than done. You will remember, also, that the higher the temperature the more likely is it that the case is one of pneumonia. In some cases you must remain in doubt, and then it is wise to stay your hand, and in a few hours, perhaps, the appearance of a pleuritic rub or a patch of dullness will make clear the nature of the disease.

Pericarditis, but apparently only when the diaphragmatic surface is involved, may also simulate abdominal disease, although it is much less common as a source of error than pleurisy or pneumonia. I remember a case of the sort which made a strong impression upon me at the time. The patient was a little boy, who was admitted to hospital under the belief that he had acute appendicitis. He looked very ill, lay with the knees drawn up and the abdomen rigid, complaining of pain which he referred to the hypogastrium. There was moderate fever, but an entire absence of other signs. I have forgotten whether he vomited. He was kept under observation for a few hours, and it was decided that if there were no more positive indications by the evening the abdomen should be opened. Just before the time agreed upon for this, however, a loud pericardial rub became audible, and the case subsequently ran the course of an ordinary rheumatic pericarditis.

INTRA-ABDOMINAL CAUSES OF PAIN.

Let us now pass on to consider the far more frequent cases in which the cause of pain is situated in the abdomen itself. We may divide these for the sake of convenience into (1) cases of sudden or catastrophic pain, and (2) cases of chronic or recurrent pain.

Sudden Catastrophic Pain.

By the "catastrophic" cases I mean those in which the pain sets in suddenly—"out of the blue" so to speak—and is of great intensity. They are the cases often spoken of as "abdominal catastrophes," and include many examples of what are known in surgical slang as "the acute abdomen." They are for the most part of surgical rather than medical interest, and I shall not say much about them except to point out as far as one can those in which immediate laparotomy is indicated.

At the outset it may be well to remind you that the possible causes of an abdominal catastrophe are far fewer in the child than in the adult. Children do not suffer from perforated gastric or duodenal ulcer, for instance, or from acute pancreatitis, and I can recall only one case of biliary colic in a child. The possibilities which one has chiefly to consider when confronted with a case of severe abdominal pain of sudden onset at this age are acute indigestion, appendicitis, and some form of acute intestinal obstruction, of which that due to intussusception is specially frequent in the child. Amongst the rarer causes one might perhaps mention abdominal or Henoch's purpura. Renal colic, which may also have to be considered, I shall have occasion to mention later on.

The immediate practical diagnostic problem in such a case is to eliminate *acute indigestion*. This is not always easy. The pain of acute indigestion may set in suddenly, may be of great severity, and may be attended by fever and considerable distress. Here is an example. A boy of 7, whilst convalescing from a mild attack of whooping-cough, was attacked by sudden abdominal pain of considerable severity, and in an hour or two his temperature had run up to 104°. He was restless and distressed, and begged that "something should be given him to relieve his pain." In view of the recent whooping-cough various diagnostic possibilities presented themselves, but soon one's doubts were solved by the copious vomiting of a quantity of undigested food, shortly after which he broke into a profuse sweat, and the temperature came down with a run. If in doubt about such a case, the best course is not to pooh-pooh the whole affair as a mere stomach-ache and to give a dose of castor oil—still less an opiate—but to hold one's hand and wait. Meanwhile, there is no harm in giving an enema, and perhaps a mild emetic, and applying heat to the abdomen for relief of the pain.

The possibility of *appendicitis* is what will give you the most anxiety in these acute cases of pain. I shall not go into the diagnostic criteria in this matter in any detail, as they are much the same as hold good in the case of the adult; but I would only remind you that pain is the *earliest* symptom in appendicitis, that it is usually experienced first in the epigastrium, and only later settles into the right iliac fossa, and that it is rarely of great severity except in a very nervous child. Vomiting nearly always occurs, but it follows the pain and does not persist, as it does, for example, in cyclical vomiting; and although more or less fever is always present at some stage of the attack, it is rarely great in degree. In looking for muscular rigidity in children, light palpation is more important even than in the case of the adult.

Acute intestinal obstruction is nearly always attended by pain, which may be very severe, but I have seen cases of intussusception in which, at the outset at least, pain was entirely absent; probably they were cases in which there was an unusually long mesentery. The classical signs and symptoms of obstruction will be present in the child as in the adult, but it is well to remember that, owing to the tendency of the child to develop a temperature on slight provocation, some fever may be present even in purely obstructive cases, especially, perhaps, in intussusception. In the examination of these cases an anaesthetic is often of great help. It saved the situation in the case of a little boy whom I saw not long ago, who had been seized two days previously with severe abdominal pain. Other symptoms of intussusception were absent, but the abdomen was rather rigid and difficult to examine. He did not seem at all ill, and one was inclined to regard it as a case of colic, but under a whiff of chloroform the abdominal walls immediately relaxed, and a typical sausage-shaped tumour could then be felt running across the abdomen.

I have mentioned *abdominal purpura* as a possible cause of sudden acute pain. You will not expect to meet with this often, but as it is usually attended by haemorrhage from the bowel, it may simulate intussusception rather closely. A mistake may be avoided by careful examination for purpuric blotches in the skin, which are often to be found in such cases.

Chronic or Recurrent Pain.

When an adult complains of chronic pain in the abdomen the first organ one thinks of is the stomach. In the child, however, the stomach is rarely at fault in such circumstances. Children, I need hardly remind you, do not suffer from organic disease of the stomach, such as ulcer or carcinoma, and in them chronic or recurring abdominal pain usually has its seat of origin in the intestine. It is true that ordinary indigestion may cause some pain, probably from distension of the stomach with gas, but it is rarely severe in degree—rather a mere discomfort—and its definite relation to meals and its relief after the belching up of wind will usually make the nature of the case plain. The intestinal cases are, as I have said, far commoner, and we may divide them for convenience into those due to (*a*) ordinary colic, (*b*) "umbilical" colic, the meaning of which is to be explained immediately, (*c*) enterospasm, and (*d*) chronic obstruction.

(*a*) *Ordinary colic* is, of course, the commonest cause of abdominal pain in little babies, but it is met with also often enough in older children, and may contribute to the pain in those cases of acute indigestion of which I have already spoken. In the chronic or recurrent form it is more apt to appear as the variety known as "umbilical" colic, of which I shall speak presently. In whatever form it shows itself it is characteristic of colic that the pain occurs in spasms, that it is relieved by firm pressure—differing in this profoundly from the pain of appendicitis, for instance—and, what is of great diagnostic value if it is observed, that it is relieved, temporarily at least, by the expulsion of flatus from the bowel.

(*b*) The term "*umbilical*" *colic* was introduced by Professor Moro to designate a common group of cases, met with in children of school age, in which the patient

complains of frequently recurring abdominal pain, which is always referred to the situation of the umbilicus. The pain may come on suddenly at any time in the day, but sometimes quite definitely after or during a meal. It may be severe whilst it lasts, even doubling the child up, and may be attended by sudden pallor. Vomiting is rare. The attack may last for only a moment or two or for a few hours, and there is sometimes a tendency for attacks to exhibit periodicity. As I have said, these cases are by no means uncommon, and every one who has done much out-patient work amongst children must be familiar with them, but their real nature is obscure. There are usually no objective signs of disease to be made out, and Moro was of opinion that the condition is a pure neurosis. I can hardly think this likely, and it seems more probable that we are dealing in these cases with a genuine colic in the large intestine occurring in rather constipated nervous children in whom perhaps the "gastro-colic" reflex is abnormally active—a condition closely akin to lienteric diarrhœa. Of the treatment of these cases, which is troublesome enough, there is no time to speak to-day, but their chief importance arises from the fear that in them one may really be dealing with "chronic appendicitis," but on that subject I shall have something to say in a moment.

(*c*) *Enterospasm* as a cause of abdominal pain is met with in children who are the subject of muco-membranous colitis. This is not infrequent in childhood, and when spasm of part of the colon occurs very severe pain may be produced. The contracted bowel may sometimes be felt, usually in the left iliac fossa, and the presence of mucus and membranes in the stools should make the diagnosis clear. It is worth remembering that muco-membranous colitis in children is sometimes attended by prolonged fever of considerable degree, and when attacks of enterospasm are superadded mistakes in diagnosis may easily occur.

(*d*) *Chronic intestinal obstruction* as a cause of abdominal pain is rare in childhood, and when it occurs is usually due either to compression of the bowel by a band, or a persistent Meckel's diverticulum, or to adhesions the result of old tuberculous peritonitis. The pain resembles that of colic in its nature, but there is usually some meteorism present, and visible coils of intestine may be seen. There is not necessarily any vomiting. The use of the *x* rays may help in the diagnosis if one is in doubt. The most difficult cases are those due to chronic intussusception, and in at least two instances of that condition I have known the true cause of the pain overlooked, even though the patient was for a long time under observation in hospital.

Appendicular Pain.

I now come to the most anxious cases of all—those, namely, in which the question arises whether a chronic or recurrent pain has its seat in a diseased appendix. There are some, I believe, who deny the existence of chronic appendicitis in childhood altogether. I think I have heard a surgeon say that a child either has acute appendicitis or the symptoms are not due to the appendix at all. Most of you will probably agree that this is an extreme view, but at the same time I am sure that one ought to be extremely cautious in diagnosing chronic appendicitis in children, especially when the pain is confined to the right side of the abdomen. On the other hand, it is probably nearer the truth to say that disease in the appendix in the child is never chronic from the beginning, there is always a preceding acute or subacute attack. In making a diagnosis, therefore, a history of such attacks should be inquired into with great care. They will usually be described as "bilious attacks," but if they were attended by pain, some vomiting, and fever, and were bad enough on any occasion to confine the child to bed, one should be very suspicious. Physical examination in cases of chronic or relapsing appendicitis *between attacks* may be entirely negative, and I do not think that the use of *x* rays affords much help. One must often be in doubt between chronic appendicitis and "umbilical colic," but if there is a clear history of "bilious attacks," and if the parents, as so often happens, are worried about the state of the appendix, then I think it is best to advise exploration, although it is unwise to guarantee any result from the operation other than the relief of the parental mind.

Worms are often believed by parents to be a cause of abdominal pain in childhood, but my own experience would not bear this out. Round worms are those which would be most likely to produce the symptoms, for they are sometimes numerous enough even to produce intestinal obstruction. A vermifuge will soon settle the diagnosis.

Enlarged glands, on the other hand, are, I believe, a much commoner cause of abdominal pain in children than is generally realized. I do not mean necessarily tuberculous glands, but a simple enlargement of the glands at the lower end of the mesentery. These often become infected in cases of appendicitis in children, just as the glands at the angles of the jaw do in tonsillitis. I saw a very striking example of this not long ago in the case of a boy who was suddenly attacked with pain, vomiting, and fever. He presented the signs of appendicitis, but there was a curious tumour about the size of a walnut to be felt in the right iliac fossa which was certainly not the appendix. At operation it proved to be a mass of acutely inflamed glands, the appendix being also inflamed and its mucous membrane ulcerated. There is often no history of any acute disease in these cases of chronic enlargement of glands, though no doubt they must have been infected from the cæcum or appendix; but, once enlarged, they are apt to cause pain in the right lower quadrant, possibly by dragging upon or kinking the bowel. At all events they are often the only thing found wrong in children on whom an exploratory operation has been performed for suspected chronic appendicitis, and their removal is usually followed by disappearance of the attacks of pain.

Causes in the Urinary Tract.

Affections of the urinary tract are a frequent and often overlooked cause of abdominal pain in early life, just as they are in the adult, although some conditions which are relatively common in grown-up persons are rare in the child. Movable kidney, for example, though it is occasionally met with in children, need hardly be thought of as a cause of pain. Attacks of true renal colic also are not often exhibited in the child, though gravel is perhaps a not uncommon cause of pain in babies. On the other hand, there are two conditions which are certainly more frequently sources of abdominal pain in the child than is generally realized: one is *kinking of the ureter* and the other is *ureteric calculus*.

Kinking of the ureter results, as you know, from a congenital abnormality in the distribution of the renal blood vessels. As a rule it does not produce symptoms until early adult life, but I believe that it would be diagnosed oftener in the child if it were looked for. It is one of the causes of so-called "bilious attacks." I had once a very striking example of this in the case of a boy of 15, who was alleged to have suffered since his early childhood from attacks of abdominal pain and vomiting which recurred every few weeks with great regularity. They had been diagnosed as "bilious attacks." I happened to see him in an attack. He referred the pain to the left loin, and an enlarged and slightly tender kidney could easily be felt on palpation. Surgical investigation established the presence of kinking of the ureter, and a greatly disorganized kidney was subsequently removed. These cases are deceptive because of the regular periodicity of the pain and the entire absence of any urinary symptoms.

Ureteric Calculus.—Just as the symptoms of a kinked ureter are apt to be diagnosed as "bilious attacks" so the symptoms of a ureteric calculus, when it occurs in the right side, are usually attributed to "chronic appendix mischief," and indeed the simulation may be very close. There may be a history of attacks of right-sided spasmodic pain; there may be a rise of temperature and tenderness over the ureter (which is very close to McBurney's point), and urinary symptoms may be absent. The moral is that a radiograph of the ureteric region should always be taken before an operation is performed in quest of a supposed diseased appendix.

In the male *urethral obstruction* as a result of phimosis or a narrow meatus may cause attacks of hypogastric pain from over-distension of the bladder, but the association between the pain and the difficulty of micturition is usually obvious, and the vesical tumour easily made out. In girls, on the other hand, one has sometimes to think of *pelvic causes* such as salpingitis, but I mention these rather for the sake of completeness than because I regard them as common causes of abdominal pain in childhood.

A Clinical Lecture

ON

EPILEPSY CONSIDERED AS A SYMPTOM, NOT A DISEASE.

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So much has been written about epilepsy from the earliest times that it may seem presumptuous in anyone to think or hope that he may contribute something new to such a subject. I should make no such claim, for I feel sure that much of what I am about to say has been said before, although it may have been said differently, and the subject may have been approached from a somewhat different angle. I have been fortunate enough to have a considerable experience of this disease, if disease it is to be called, during a good many years, and I have been not a little disappointed and surprised at the tendency which has lately become obvious towards an attempt to approach its explanation on other grounds than that of physical disturbance—in my opinion, a definitely retrograde movement.

In a recent paper[1] Dr. Pierce Clark, apparently despairing of any physical interpretation of epileptic phenomena and curiously oblivious of the constant tendency in Hughlings Jackson's writings, sets himself to explain them on a psychological basis. Such a psychological basis for phenomena of which the physical symptoms are so distinct, requires much ingenuity and not a little imagination. It seems to me that it would be just as reasonable to require a psychological basis for Jacksonian fits, or for uraemic convulsions, or for the convulsions produced in a monkey by the intravenous injection of absinthe, as for the phenomena of what has been called epilepsy. With regard to the so-called "latent phenomena" of epilepsy we frankly have no belief in them. We happen to know men (and women too) subject to occasional convulsive attacks, who on ordinary occasions are normal healthy individuals, working regularly, doing good work, capable intellectually and physically, in whom the most earnest psychological analyst or observer would fail, we feel sure, to detect any abnormality. And to say that "transitory phobias, ecstasies, and most common of all, irritable and depressive states," are characteristic of latent epilepsy, is to make statements which any physician is able out of even a limited experience, to contradict explicitly. Even of so-called advanced cases of epilepsy—by which we understand is meant cases subject to recurrent convulsions during many years—to say that these are characterized by "ethical depravity of the entire personality" is to state what in the experience of many of us is not correct. Every physician knows that such "ethical depravity" is not uncommon as a degenerative sign without any tendency to convulsion; and what is spoken of as an "egocentric contraction of the entire emotional life," characterized by pathological lying, etc., is certainly not symptomatic of, or confined to, patients who are the unfortunate subjects of repeated convulsions.

Dr. Pierce Clark says he undertook a study of the "character make-up" in a small series of "essential epileptics" before they had their first attack. It would be interesting to know whether this study was really made before the first attack or was an afterthought. If it was made before the first attack one would like to know the basis for his belief that attacks were coming; if it was made after the attacks were established then of course it loses any little value it might have had. He says he found "nothing wanting in the complete picture of the character as seen in those suffering from a long enduring and severe epilepsy." He also remarks on the different attitudes of "trained clinicians" in epileptic colonies and physicians in private practice. He seems to deny the title of "trained clinicians" to physicians in practice. Does he not think that the so-called "trained clinician" in an epileptic colony is much more likely to be biassed in his views than is a man who is at least equally well trained, and much more widely experienced in varied forms of disease? He even claims that the colony physician has a much broader view of the whole problem, which, of course, is absurd, seeing that he is dealing with advanced and apparently incurable cases, and has no experience (or ignores it) of patients subject to occasional attacks who are able to get about, to do good work, and of whose tendency to occasional attacks everyone, except their immediate relations and their physician, is in complete ignorance. The colony physician surely has a narrow and restricted view of these phenomena because his patients are of a class only suitable for institutional treatment—for, as the author confesses, the institutional physician "receives the most badly deteriorated patients." It is quite beside the mark to say these are "fearfully handicapped by drug and surgical treatment." The point to be recognized is that as a class they *are* deteriorated. But it does not at all follow that the numerous patients subject to occasional convulsion—many of them active and useful and energetic members of society—are to be regarded as the subjects of the same psychical condition as those institutional inmates.

With special reference to Dr. Pierce Clark's assumption that there is something in the so-called "psychological make-up" of patients usually called epileptic, I will now mention briefly some cases which have come under my own observation which to my mind afford clear evidence that patients who have suffered from these so-called epileptic fits have no signs of either physical or mental deterioration.

The first case is that of a healthy-looking man of 50, who consulted me some years ago on account of several convulsions occurring in the previous year. He was an energetic business man, busily engaged in the control of a large and important business in which he had been unusually successful. The history was that at the age of 17 he had had an attack in every way similar to those for which he consulted me. He was put on simple treatment, his activities, mental and physical—he was a keen lawn tennis player and golfer, as well as an active business man—were in no way interfered with, and he went on well. Soon after I saw him he was elected Provost of an important town in Scotland, and the duties of this office—extremely exacting throughout his years of office during the war—were carried out in such a way as to earn him praise from everyone, and recognition in the highest quarters. He still pursues his active business career and is in every respect a healthy man. He has entirely left off medicinal treatment.

The next case is that of a young man of excellent physique, who two years before the war had on successive days two generalized convulsions. He was put on medical treatment, which was continued in gradually decreasing doses for two years. There was no recurrence of any kind, and he served in the army during several years of the war. He is, and has been since he was demobilized, actively engaged in an extremely responsible position in a business house, and has remained quite well.

The next case also is that of a young man—a hospital patient, engaged in electrical work, who for some years had been subject to recurrent convulsions, with loss of consciousness. He had been compelled by the frequency of these to give up his work, and treatment at first only succeeded in abating the frequency and severity of the attacks. Persistence in treatment, however, was finally successful in completely controlling them, and for over a year now he has been free from attacks, and has been actively engaged in his somewhat arduous and responsible work.

The next case was certainly at first sight not a promising one—a lady between 50 and 60, who had been subject for many years to convulsive attacks, with loss of consciousness. These occurred at varying intervals—sometimes of months, occasionally of days—and there were also occasional minor attacks. Treatment on rational lines in her case was also successful, and she has now been for over a year free from attacks, living the ordinary social life of a lady of good position, and occupying herself much in good works.

The last case I shall mention is that of a lad whom I saw five years ago, who had then had only a few attacks, always in the morning after getting up. He had one or two after treatment was commenced, but none in the last two years, and he is now actively engaged in study at one of the universities.

I could mention other cases, but these will suffice to emphasize the point I wish to make, namely, that patients who have been the victims of attacks—even if these have been spread over a good many years—do not necessarily deteriorate either physically or mentally. I may mention that in all these cases bromide has been the "sheet anchor" in treatment, but this, like other drugs, must be used with intelligence and discrimination, both in regard to dose and mode of administration. Of course, no one with any experience of these cases of convulsion can think of denying that there are cases—unfortunately not a small class—in which treatment is inefficacious, and in which the convulsions persist in spite of all one's efforts at treatment. These we must assume are cases in which degenerative processes are superadded to some local disturbance, or cases in which the local disturbance is so situated or is of such a nature as to lead to such changes. But it seems to me unreasonable to suppose that such cases are the result of anything but physical changes.

I think that in the past we have given far too much attention to those cases of generalized recurrent convulsions to which the name of epilepsy has been applied, and too little attention to those cases of localized or Jacksonian attacks which were also described by Bravais. For I believe it is by a study of these and of their relation to the cases of so-called ordinary epilepsy that any real step forward in the elucidation of the nature of these ordinary cases, and in their treatment, is to be looked for.

Although I was under the impression that I had arrived at this belief independently, I have little doubt that I must have imbibed the substance of it from Dr. Hughlings Jackson's teaching. For I have recently found that so long ago as 1874 he wrote as follows:

"I have long been convinced that 'idiopathic epilepsy' is far too difficult a subject for precise investigation unless we approach its consideration from the bases supplied by the principles deduced from the less complex kinds of cases."[2]

Again he says[3]:

"Epilepsy like aphasia has been studied with a psychological habit of mind, and, as I think, this way of studying such a disease is unfruitful."

Let us now consider for a moment these cases of localized or Jacksonian fits. These fits are recognized as the result of changes occurring locally in the brain giving rise to signs of irritation in the peripheral structures, motor or sensory, related to the unstable brain area.

We need not consider now the nature or cause of the irritability. It may, of course, be various. A certain part of the brain is irritated, movement is produced in a peripheral part and may remain restricted to this, or the movement may spread so as to affect all parts of the body, and also affect consciousness, this being the result of a spread of irritation from an unstable area to normal structures. In other words, the convulsion may become general—any Jacksonian fit may become a general convulsion—the convulsion may start as the result of irritability in some unstable cells, but the irritability may spread from this focus or fulminating area and cause discharge in structures which are quite healthy and normal. It is not uncommon for a patient subject to Jacksonian attacks to suffer from attacks of varying degree. On one occasion the convulsion may affect only a finger and thumb; on another occasion it may spread to affect a whole limb; or on still another the convulsion may affect the whole body, and if this happens, consciousness is almost always, if not invariably, lost. If the convulsion is a purely local one, consciousness is nearly always retained, and not infrequently a local convulsion is prevented from spreading by firm pressure on, or pulling of, the limb proximal to the part already in a state of movement. Many such cases have been published, and the evidence is familiar to all students of this disease. In such a case we are justified in assuming that there is some local condition—it may be mechanical, it may conceivably be chemical or nutritional, rendering a few cells unstable and inducing in them a tendency to the discharge of nervous energy; and the instability of these cells may, unless it is by some means prevented, as by some strong effect on the peripheral structure, induce in contiguous healthy cells a similar instability and tendency to the liberation of nervous impulses. If this spreads widely enough a general convulsion may result.

As an illustration of what I have here said I may mention the case of a patient seen with Dr. Fawcett and Dr. Spon, and subsequently by Mr. Percy Sargent. The patient was a healthy man who had for some time suffered from fits, some slight without any loss of consciousness, others more severe with general convulsion and loss of consciousness. All the fits, whether slight or severe, started with a sensation and subsequent movement in the right lower limb. Sometimes the convulsive movement affected only this limb and consciousness was not lost. In others the movement spread from this limb and became generalized, and consciousness was lost. It was obvious that in this case the focus of irritation was in what is known as the leg area of the left hemisphere, an area near the middle line. There was no headache and no optic neuritis, but the condition was regarded as probably the result of the irritation caused by a tumour growing in or from the meninges in this region, and Mr. Sargent was able to remove a growth of a non-malignant character from the situation in which it was possible to foretell its presence. I have purposely refrained from over-burdening this brief account of this case with details which are unnecessary for our present purpose, which is to show that local irritation may give rise to only a local disturbance in the peripheral parts—a Jacksonian fit—or may result in a general convulsion commencing locally. I may mention that although the fits in this case occurred once or twice after the operation, and although there was some subsequent weakness of the affected side, the fits have now been absent for some years.

There is a class of patients consideration of the cases of whom is very instructive from the point of view of local irritation causing fits. I refer to cases of so-called infantile hemiplegia the result of an inflammatory condition similar to that occurring in the spinal cord causing infantile paralysis, and probably identical in origin. The initial illness is usually acute, characterized by violent convulsion, feverishness, etc. The convulsions in such cases commence unilaterally, and during the acute stage become general, and there is not infrequently a condition of real *status epilepticus*. If the patient recovers, the resulting condition is one of hemiplegia, sometimes very severe, sometimes very slight, and in after-life there is a liability to the occurrence of convulsions, sometimes only unilateral of the affected side of the body, sometimes spreading from such a commencement to become general.

I might here digress for a moment to recall the fact that besides the severe general convulsion with tonic and clonic spasm—*grand* or *haut mal*—which occur in so-called idiopathic epilepsy, there are also conditions of *petit mal* in which there may be only momentary loss of consciousness without convulsion. I now proceed to relate a case which was under my care and observation for some years—that of a woman of 25 with a definite history of convulsion occurring in early life in the course of a feverish attack, and resulting in slight right-sided weakness. The hemiplegia, it was said, passed off, but there was still slight right-sided weakness. The patient was left-handed, but was able to write with the right hand, and the condition was obviously one of very slight right hemiplegia dating from early life, and apparently the result of an attack of polio encephalitis of the left hemisphere. She consulted me on account of her liability to occasional "fits," apparently general convulsions, starting in the right hand. But even more troublesome than the attacks of severe convulsions, which did not occur very often, were attacks of *petit mal* of frequent occurrence, and often followed by a condition of "automatism" in which apparently purposive acts were carried out quite unconsciously.

Such attacks of *petit mal* with automatism are supposed to be characteristic of so-called essential or idiopathic epilepsy, and I would urge that a case such as that which I have just related is somewhat strong presumptive evidence that such a condition of *petit mal* is probably in other cases associated with actual structural changes in the brain, just as it certainly was in the case I have related. I do not here refer to the explanation of the automatism.

Dr. Hughlings Jackson was, I believe, the first to direct our attention to an exceedingly interesting class of cases, in which the chief symptoms were a curious aura of "reminiscence," also spoken of as the "intellectual aura" or "dreamy state," in which the patient seems to be passing through a familiar experience so that he almost knows what is coming next, and this is usually, although

not invariably, associated with a curious but indescribable, often disagreeable, smell. To such cases Dr. Jackson applied the name "uncinate epilepsy," because in some cases in which such an aura was associated with convulsions, or at least with loss of consciousness, a lesion was found in the uncinate gyrus of the temporo-sphenoidal lobe.

In some cases the lesion was a tumour, in one case a small non-malignant cyst. In the case[4] in which the cyst was found by Dr. Walter S. Colman the patient was a medical man who had been subject for many years to recurrent attacks ushered in with the "dreamy state." In this case the cyst was probably the result of some early, probably vascular, lesion, the effect of which was to produce a small area of unstable cells in that particular region. Here was a case characterized by recurrent convulsions of a particular kind, only differing from other cases of so-called idiopathic epilepsy in the character of the aura which preceded a fit. We know that in some of these cases the convulsion is associated with a structural change in a certain part of the brain. It is only reasonable to conclude that in all of them this same area is unstable—the cause of the instability in many is not proved—but the presumption is that in all the cause is a structural derangement.

There is another class of cases in which the convulsion is preceded by a visual aura. In some of these the aura is a somewhat elaborate one—a little woman in a red cape or some equally definite vision. In many the visual sensation preceding a fit is a simple one of flashes of light, and this causes the convulsion. In one case, which I have related elsewhere, the fits were left-sided, preceded by an indefinite disturbance of vision. These fits had come on rather suddenly and unexpectedly in an old lady sent to me by Mr. Fisher, and they were associated with definite homonymous hemianopia. The fits gradually ceased, the hemianopia persisting but gradually and completely disappearing. This lady made a complete recovery, and remained well for several years. In such a case one is justified in assuming that there was some vascular lesion—in the occipital cortex—which was at first irritative, but when the irritability of the cortex had subsided or been controlled resulted in temporary interference with the functions of the area in the cortex subserving the fields of vision of the opposite side. Such a case suggests that in cases with similar visual phenomena associated with fits the fits are due to some disturbance in the same area, and the fact that the convulsions are recurrent merely shows that the irritation is a persistent one, and not transitory, as in the case just related.

There is another class of cases that have to be considered—those, namely, in which attacks may have been present for years, associated with convulsion and loss of consciousness, but yet in which no sign of gross disease has been discoverable. I have elsewhere related two cases of this nature—one a patient who had been attending at the National Hospital, Queen Square, for seventeen years suffering from recurrent convulsions, but who unexpectedly developed headache, and was found to have optic neuritis. This patient died, and was found to have a large cerebral tumour. Another patient was under my own care, and had been attending for four years on account of occasional convulsion with loss of consciousness. He had no headache and no optic neuritis, and his convulsions were few in number under treatment; but he suddenly found himself suffering from severe headache, was found to have optic neuritis, and the headaches became so severe that decompression was undertaken with the hope of relieving him. There was intense intracranial pressure, and he died after a few weeks, and a large growth was found in one hemisphere. These two cases are, I believe, examples of a group—not perhaps a very large one—but they illustrate the thesis, so far at least as such a group is concerned, that such cases—apparently for years cases of so-called idiopathic epilepsy—are really cases in which early slight structural changes are almost certainly the cause of the fits.

It is well known to all who are interested in cases of recurrent convulsion, and who see many patients suffering from these, that there is a large class of cases in which the fits occur only during the night, so it is said, and these cases are named "nocturnal epilepsy." I think most observers will agree with me that it is not the time of day which determines the onset of convulsion in these cases, but the condition of sleep, for it is not uncommon for a patient who suffers from such convulsions to have a fit during the day if he happens to fall asleep. So that it is sleep that really determines the attack, and the presumption is that it is some condition of nutrition or circulation associated with sleep which gives rise in certain cells to discharge which results in a convulsion. What the actual condition is we need not at present inquire. It is sufficient for our present purpose to note the fact.

In another class of cases the fits always occur in the early morning while the patient is dressing. In one case the fits only occurred if the patient had an early cold bath, and always occurred in the bathroom. In such a case it would seem as if the change of posture from the recumbent during the night to the upright in the early morning was the determining cause, and it seems natural to presume that the accompanying modification of the circulation was sufficient to give rise to the conditions determining a discharge in unstable cells.

Such considerations as those I have set out and the study of cases of a nature similar to those I have mentioned, seem to me to indicate clearly that epilepsy should not be regarded as a disease but as a symptom. The convulsions of what is called epilepsy are not in their manifestations to be distinguished from the convulsions of uraemia or from those occurring with heart-block and in other conditions. It is only the discovery of associated conditions which reveals the true nature of the convulsions, and the more one sees of these convulsions in what is called ordinary epilepsy the more is one driven to the acceptance of Hughlings Jackson's dictum that "there is no such thing as a case of ordinary epilepsy."

Each case of recurring convulsion must be studied by itself. The origin of the convulsions, their nature, the march of the discharge, and especially any premonition or "warning," must be most carefully considered. By such study the cause of the convulsions is most likely to be revealed, and if this is disclosed, treatment, either surgical or medical, may be undertaken with some hope of success.

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[1] *Brain*, vol. xliii, pt. 1. [2] *Med. Times and Gazette*, October 14th 1874. [3] Ibid. [4] *Brain*, vol. xxi, p. 580.

An Address
ON
THE HOUR-GLASS STOMACH.*

(With Special Plate.)

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A DESCRIPTION of this well-known condition—hour-glass stomach—is hardly necessary, and in its typical form the *x*-ray picture is dramatic to a degree (Fig. 1). The picture of such a typical condition, after a test barium meal, shows the upper sac or cardiac end full of the food, and the lower end of this shadow has a clear cut margin, which as a rule comes down below the level of the narrowed outlet. At the site of the outlet on the lesser curvature is the ulcer cavity, with its lower part full of the food and with a gas bubble above it. A narrow stream of food passes downwards into the lower sac. This lower sac is half filled or more than half filled with food, and in this lower part, as watched on the *x*-ray screen, normal stomach contractions are seen and food going through the pylorus. This is the typical picture, but its *x*-ray varieties are very numerous, and scarcely any two cases are exactly alike in all their details. I have a record of 151 cases in which radiography showed an hour-glass condition of the stomach following on a test meal. An analysis of these cases brings out certain facts and shows certain fallacies and the possibilities of errors. The many variations which occur will depend upon, for the most part:

1. The size of the upper sac.
2. The size of the constriction.
3. Whether or not an actual ulcer cavity exists and fills up with food, and, if so, its shape and size, and whether there are adhesions to neighbouring organs and tissues.

* Given before the Manchester Medical Society, November 1920.

FIG. 1.—Typical hour-glass constriction from ulcer of perforating type on lesser curvature.

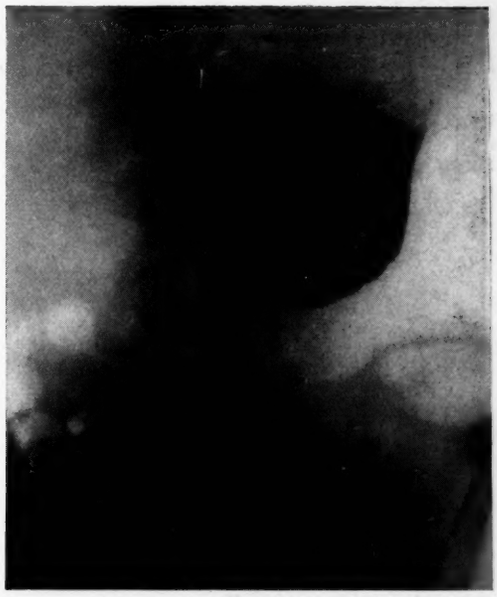

FIG. 2.—Hour-glass stomach: small and non-adherent ulcer on lesser curvature. Tight constriction. Eight hours after meal.

FIG. 3.—Hour-glass constriction. Perforating ulcer. Definite constriction with large opening.

FIG. 4.—Hour-glass constriction and ulcer cavity. Immediately after meal, no food in lower sac. Coin on umbilicus.

FIG. 5.—Hour-glass constriction. Ulcer cavity full. Food in constriction. Traces of former meal in descending colon.

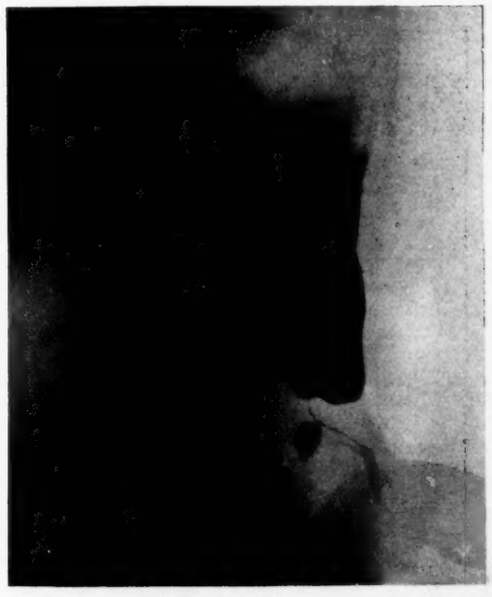

FIG. 6.—Five hours after meal. Shows upper sac, ulcer cavity, and a trace of food in the lower sac. Extremely tight constriction; no food entered lower sac until five hours after meal.

FIG. 7.—Simulation of hour-glass constriction by pressure from gas-distended colon.

FIG. 8.—A real hour-glass constriction from ulcer on lesser curvature masked by pressure from gas-distended colon.

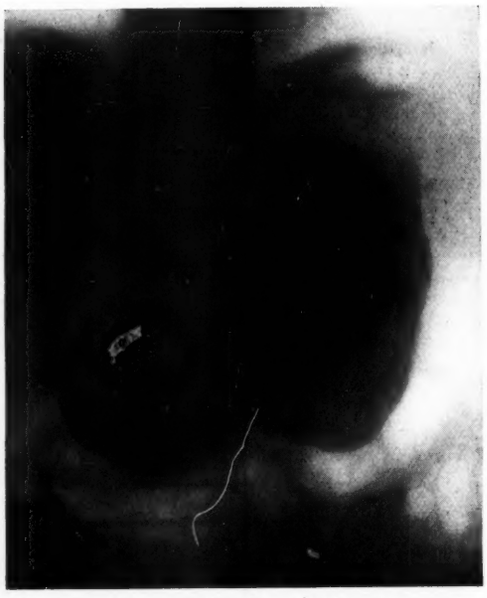

FIG. 9.—Spasmodic hour-glass constriction in a male. The spasm was permanent during a long examination, repeated at intervals. Compare Fig. 10.

FIG. 10.—Second examination. Same case as Fig. 9. Spasm not present.

FIG. 11.—Early hour-glass constriction (true) from small ulcer on lesser curvature. The ulcer had previously perforated, and the patient had been operated upon.

FIG. 12.—Hour-glass constriction in a woman with typical history. At operation considered to be malignant.

4. The condition of the lower sac.
5. The presence of pyloric obstruction in addition.
6. The presence of adhesions generally.

(See Figs. 2, 3, 4, 5, 6.)

FALLACIES AND POSSIBLE ERRORS.

If the definite typical appearances are seen no possibility of error presents itself, and the diagnosis is certain. In less typical cases, however, there are certain possibilities of error which must be reckoned with and guarded against. I will allude to a few of the more common possibilities.

1. *Gastroptosis.*—In this condition the stomach may be much elongated; food on entering collects in the cardiac end, extends downwards in a straight or more or less thin line, and then fills up the lower portion of the stomach. The appearance of an hour-glass constriction is thus simulated by the drawing out, and so drawing together, of the central portion of the stomach surfaces. However, no error of diagnosis should arise in this condition, since (1) the pressing up of the food from the lower part by the hand when viewed on the screen, and (2) the examination of the patient in the lying down position, will at once obviate any possibility of making a mistake.

2. *Malignant disease* will not unfrequently give rise to appearances simulating hour-glass constriction from old simple ulcer; but as a rule this disease causes other alterations in the shape of the shadows which will at once give rise to suspicion. Additionally the history of the case—the more rapid onset of symptoms—rapid loss of weight, and so on will indicate the real nature of the case.

3. *Pressure from Distended Large Bowel.*—A large collection of gas in the splenic flexure or its neighbourhood pressing into the greater curvature of the stomach will occasionally (1) cause the food shadow to simulate an hour-glass constriction, or (2) may may mask a real hour-glass stomach. If this gaseous distension—easily recognized on an *x* ray plate—is seen, the bowel should be again cleared out and a second examination made. This, and the screen appearances seen on pressing food upwards from the lower part of the stomach, easily leads to the differentiation. (Figs. 7 and 8.)

4. *A Small Ulcer on the Lesser Curvature and Spasm.*—These may be considered together. The former may set up spasmodic contraction, or spasmodic contraction may be present alone without any definite stomach lesion. In the latter case it is as a rule associated with bad teeth, the appendix, gall-bladder trouble, duodenal mischief, or more remotely the pancreas. These spasmodic contractions are always atypical. They differ entirely from the appearances seen in the typical case described. Both causes give rise to a definite drawing in of the greater curvature, which, at any rate for a time, will sharply divide the stomach shadow into two well-marked portions—an upper and a lower sac. (Figs. 9 and 10.)

Sometimes a true hour-glass constriction will give rise to the same *x* ray appearance and take this form of a sharp drawing in of the greater curvature on quite a small area, and it is this true hour-glass stomach which has to be differentiated from the pseudo-type. (Fig. 11.)

To do this, and when this appearance is seen, very great care must be taken. Sometimes massage of the stomach will relax a spasm and clear up the diagnosis. Sometimes pressing the food in the lower part upwards will open a spasm up and prove that the constriction is temporary. If any further doubt exists, a second test meal on a future date may show the absence of any constriction. Examination in the lying-down position, the administration of belladonna, and so on, may be of help. At the same time, if we have to deal with an ulcer of the stomach which gives rise to spasm that simulates a true hour-glass constriction, then the results as regards the symptoms of the patient and the treatment required will in reality be the same. The obstruction is there and potential, whether it be due to spasm or a definite cicatricial narrowing. I emphasize the point—when an ulcer is actually present—if the spasm is due to reflex causes then its effect on symptoms will vary according to whether it is present or not, and of course no operation on the stomach itself is indicated.

SEX OCCURRENCE.

It is a very remarkable fact that—at any rate, in my experience—true hour-glass constriction from old ulcer occurs with far greater frequency in females than in males. In my whole series of 151 cases it occurred in females in 128 cases and in males in 23, but many of the males on analysis should not be classified as hour-glass constrictions of the stomach, due to simple ulcer—a point I shall refer to later on—and in a few of the females also this is the case. This means that the total number of true cases is less than 151.

It is a very curious point—I cannot offer any likely suggestions as to its cause—that, taking out all those cases in which there can be no doubt about the condition—namely, those cases of hour-glass contraction undoubtedly due to simple, as contrasted with those due to malignant, disease—and the huge majority of these are in females. This form in males is seen so unfrequently that it may almost be said to be rare. Perhaps there may be some connexion in the wearing of and pressure from corsets, but I am not very satisfied with this as an explanation.

Analysing the males in more detail, I find that—

1. Although nine of them presented an hour-glass appearance, either clinically, under the *x* rays, or at operation, or by all three methods, they were in reality cases of definite malignant disease. In all these cases the history—and I take it that this is a point of great importance—was a very short one, extending over months only.

2. Five were cases in which a gastro-enterostomy had been done some years previously, and these appeared to be due to the late effects of the gastro-enterostomy.

3. One followed on a very severe abdominal crush.

Therefore only 8 out of the 23 males can be classified as typical hour-glass stomach caused by *simple ulcer*—and of these 5 were proved by a later operation. The history of these cases was the same as that in the females—the salient point being that symptoms had been present over a number of years, extending from a few years up to, in one case, twenty years.

As a considerable number of the cases occurred during the war, complete records are unobtainable, but I have the records of 73 operations, and it seems to me that this number is enough to establish the important points.

In two of these cases only (both females) was it decided by the surgeon at the operation that there was malignant disease, and they were closed up without anything being done. (Fig. 12.)

In two cases (Mr. Thomas) at the operation enlarged glands were present, and the cases on the table were considered to be probably malignant. In both the operation was proceeded with, and a removed gland was later reported on as being "simple." The after-history of one case is not known; the other is known to have been alive and in good health six years later.

In the remaining 69 cases, at the operation nothing was found to give rise to any suspicion of malignant disease. Many—again I regret that I cannot supply exact figures—have been seen again so long afterwards that malignant disease was out of the question. I have not any record that it is known that in a single case any later suspicions of malignant disease have arisen.

Referring in detail to a few of the more interesting cases which came under observation: In one at the operation a constriction two to three inches long was found; there was no evidence of any old ulcer except some very slight cicatricial tissue along the lesser curvature. This was a female, aged 31 years, with a history of attacks of pain and vomiting for ten years. There were no adhesions; the food came away from the upper sac from its lowest point in a thin stream corresponding to the size of the constriction, which hardly admitted a small probe. This is possibly a case of congenital hour-glass stomach. A second case showed two distinct ulcer cavities on the lesser curvature. Another case showed all the food in what was obviously the upper, cardiac, end of the stomach; a thin stream tended to percolate downwards; no ulcer cavity and no lower sac was made out. The history was that eight weeks previously she had swallowed a wineglassful of oxalic acid; no doubt the lower part of the stomach had been practically destroyed. A fourth case must be one of the rarest possible occurrence: a woman of 40 years of age, the usual prolonged history of digestive disturbances, but also associated with acute colic attacks in the *left* abdomen just below the costal margin. It was discovered that she had transposition of viscera, which an *x*-ray examination showed to be complete—the stomach was on

the right side and the colon transposed. She had a typical hour-glass constriction from an ulcer on the lesser curvature.

At the subsequent operation Mr. Kelly confirmed the *x*-ray findings absolutely, but he also found a collection of gall stones in a gall bladder on the left side. It is unfortunate that we had not examined her for gall stones—they might have shown. The combination of transposition of the viscera, *plus* hour-glass stomach from ulcer, and *plus* gall stones, must be one of the rarest pathological conditions ever reported.

FREQUENCY OF THIS CONDITION.

It is obvious from the number of cases I alone can report that it is a comparatively common condition—151 cases spread over a period of ten years in the *x*-ray department of one hospital, in which only in-patients are examined as regards the stomach, prove this. Before the days of *x* rays it was looked upon as comparatively rare.

DIAGNOSIS.

The exact demonstration of this condition must be looked upon as one of the many triumphs of radiography—a triumph almost, if not quite, as fine as the demonstration of kidney and ureter stones. It is not too much to say that the accurate diagnosis is entirely one of radiography, and a consideration of the symptoms, etc., and their bearing on the case, prove this to the hilt. At the same time, of course, too much must not be expected by the surgeon, and in many points of detail it may fail to indicate certain features found at operation.

If we take into consideration the main features of a case, the difficulty—or even the impossibility—of accurate clinical diagnosis becomes evident. In its classical form you have a stomach with an ulcer of long standing somewhere about its middle, and usually on the lesser curvature. This ulcer is frequently of the slow penetrative type, and it becomes adherent to liver, pancreas, or other neighbouring structures. As a result of cicatrization the stomach, at the site of its occurrence, is so narrowed that there is a stenosis, and the food passes through the stenosed portion with more or less difficulty, according to the amount of the stenosis, or according to the amount of the stenosis *plus* some additional spasm. The latter—spasm—is of purely secondary consideration, as, if it is present, its effective action is precisely the same as a permanent cicatricial stenosis. Now, if you have an ulcer at or near the pylorus causing pyloric constriction, exactly the same potentials are present, except that the food block in the latter condition is at the pylorus instead of in the body of the stomach, and the only essential difference is the passage of the food from the stomach into the bowel instead of from one part of the stomach into the other.

The point is that the ulcer will give rise to the same symptoms in whichever place it occurs if it produces a stenosis, and you will get precisely the same history from the patient—namely, a very long history of attacks of indigestion usually associated with pain after food relieved by the vomiting of food. Sometimes there is vomiting of blood—we have a record of this in 51 of the cases only. The attacks get worse and worse, the intervals between are less and less free from indigestion, and then an attack which persists for a long time without relief, often with considerable loss of weight—due to malnutrition and inability to take food—and the patient is finally *x* rayed and the diagnosis made clear.

The history, the physical signs, the condition of the patient, will not, in the vast majority of the cases, distinguish between pyloric stenosis from ulcer and the hour-glass contraction from ulcer.

We used to hear much of the importance of gurgling on palpation—caused by pressing the fluid contents from one sac to the other—and of obtaining sour and stinking stomach contents by means of washing out, and so on, and it was said that these were diagnostic signs. To my mind they are of little or no importance, and they will not be obtained in the huge majority of the cases, but only in those cases in which hour-glass constriction and pyloric stenosis are present *in the same* case.

It is rare to find that the upper sac does not (1) allow its contents to pass on even if slowly, and it often empties quite rapidly, or (2) that it will eject its contents after an interval by vomiting. It is also rare to find pyloric stenosis associated with hour-glass stomach, although I have seen this on occasion, and when it does occur it can almost always be determined by the *x*-ray examination.

I say, therefore, that the clinical diagnosis is always one of extreme difficulty, and as a rule one can go even further and say that it is practically impossible. The diagnosis is an *x*-ray one, and, always admitting limitations as to detail, it is extraordinarily accurate.

I have taken a note as to the provisional diagnoses entered on the papers which are sent to the *x*-ray department when an *x*-ray examination is asked for. They include dilated stomach, pyloric stenosis, gastric spasm, gastric ulcer, malignant disease, oesophageal stricture, visceroptosis, intestinal obstruction, and, lastly, "cause of symptoms" and "no diagnosis"—the latter is undoubtedly the safest. In only five cases of the whole series has hour-glass been mentioned on the papers sent with patients to the *x*-ray department and the diagnosis been confirmed by the *x*-ray examination. On the other hand, when first these cases began to turn up somewhat frequently in the *x*-ray department, we got a number of papers marked "? hour-glass stomach," and in practically none of these was the condition found.

I am not making these statements in order to criticize in any way the ability of many accomplished physicians and diagnosticians, but merely to emphasize my point—namely, that the exact diagnosis is almost an impossibility, and that the distinction between hour-glass contraction and pyloric stenosis cannot as a rule be made.

Simple Ulcer and Carcinoma.

The final point I wish to raise is the bearing of these records on the much vexed question of the cause of gastric carcinoma and their bearing on the probability of simple ulcer being a frequent predisposing cause of stomach cancer. It must be, of course, understood that I am speaking entirely from the limited experience of the *x*-ray department and the impressions which the *x*-ray examinations have made.*

Examination of the records of 151 cases of hour-glass contraction, in which it may be taken that the large majority were caused by gastric ulcer, yields the following results:

We must eliminate cases definitely proved before operation to be due to causes which do not come within the scope of this paper; we must eliminate also 9 of the male cases in which, although they presented an hour-glass appearance, the diagnosis was one of malignant disease, and in which the histories were so short that there was no reason whatever for supposing them to be cases of long standing; they were obviously recent malignant disease with no previous symptoms. We come then to this: That we have some 120 females and 8 males in whom an hour-glass contraction existed and in whom the history extended over years, and of these cases 73 females and 5 males can be recorded with their operative findings. Five of the females had a history of less than one year; all the males and the rest of the females had histories of anything from two to thirty years, the longer histories largely predominating.

In these cases, as I have said before, the typical history is repeated attacks of acute indigestion *plus* pain and *plus* vomiting, and in less than half a history of haematemesis; a long history of gastric ulcer, mostly of a type in which there is obviously the greatest possible amount of local irritation due to a chronic ulcer over which food is constantly passing, and in many cases an ulcer cavity adherent to, and its walls partly made up of, neighbouring tissues. If ulcer is the usual predisposing cause of gastric cancer, then surely this is the very type of case in which it should occur frequently. Yet what do we find? In 128 cases (120 females and 8 males) only one female and two males were proved to have cancer, and in all 73 operations recorded, and with 3 on the operating table thought to be malignant, but whom the later history or the pathological report proved them to be not.

Again, and from the *x*-ray point of view, we see a large number of huge, dilated atonic stomachs due to pyloric stenosis, and without being able to give you the actual figures, I am sure that in our department they are equally frequent in men and women. The history is again one of many years' duration; the cause is practically always pyloric ulcer. So few of these are afterwards reported as

* See *Liverpool Medico-Chirurgical Journal*, January, 1914, p. 107.

showing any evidence of malignant disease that, although in an occasional case malignant disease is reported as having been found at the operation, it is so rarely that I have come to look upon these cases as so certainly non-malignant as to warrant an optimistic pre-operative prognosis.

On the other hand, an *x*-ray experience of the malignant stomach is that it is far more frequently seen in males; that on going into the history carefully, the very large majority state that the symptoms have been present for a matter of a few months only; and that never in their lives have they had any "indigestion" before this attack. There is nothing in the history to suggest in any way a pre-existing ulcer. I say that this is the common history, and that only a comparatively few relate a long-continued history of intermittent attacks of digestive disturbance.

There are also other facts bearing on this question. Duodenal ulcers are extremely common; they are continually irritated; they are rarely malignant. Cancer of the oesophagus is so common that I have seen literally hundreds of cases in the *x*-ray department. The symptoms are sudden and the history almost invariably that of a few months at the most—nothing to suggest previous ulcer.

These facts have produced a very distinct impression and raised very great doubts in one's mind that gastric ulcer is a common antecedent to malignant disease of the stomach. I suggest that these *x*-ray facts will require a lot of explanation before such a cause for cancer of the stomach can be accepted in the vast majority of cases.

SUMMARY.

1. Hour-glass contraction from simple ulcer is a comparatively common condition—frequent in females, rare in males.
2. Its symptomatic history is a long one.
3. It is almost entirely an *x*-ray diagnosis.
4. It rarely ends in malignant disease—especially in females.
5. An hour-glass condition is found in a few cases, mostly in males, and with a short history, and which is caused by malignant disease. Its *x*-ray appearances generally differ considerably from those seen in the non-malignant type, and are suggestive.
6. The experiences of a large *x*-ray department are strongly opposed to the theory that it is usual for cancer of the stomach to be preceded by a simple ulcer.

MASSAGE OF THE HEART AND RESUSCITATION.

BY

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IN a paper published in this JOURNAL (November 6th, 1920) Mr. W. E. Fisher describes cases of "Resuscitation in Death under Anaesthesia," and in regard to cardiac massage he says that "it will be of great help if an understanding of the processes concerned is quickened by a clear pronouncement by physiologists, to whom we must look for guidance and more definite directions." I feel sure that he is not aware of a paper published in 1915[1] by P. A. Martin and myself, in which we attempted to give clearer directions for performing cardiac massage than had hitherto been done, and anticipated some of the observations that he has made on the human heart. Since this paper has escaped the attention of others who have subsequently written upon the subject of cardiac massage—as is almost inevitable with the multiplicity of medical journals—I think one may be excused for recapitulating, in a journal more accessible to clinicians, some of the results there recorded, the more so as I may take this opportunity of adding some other observations on the subject of resuscitation based upon unpublished experiments.

I may first state part of the conclusions arrived at by Martin and myself.

"In performing massage of the arrested heart with a view to reviving the spontaneous contractions, the following points are of importance:

"Compression should be gradual and relaxation abrupt. The rate of compression should be at most less than half the normal heart rate. Massage should be regularly interrupted at short intervals for a few seconds to allow the spontaneous beats to develop. When the heart is arrested, massage, properly performed, acts both as an artificial circulation and as a mechanical stimulus to the heart muscle.

"Massage can be performed in the following ways, arranged in order of efficacy: (1) By direct compression of the heart through an opening in the thoracic wall; (2) by compression of the heart above the diaphragm through an opening in the abdominal wall; (3) by simple compression of the abdomen; (4) by simple compression of the thorax.

"Direct thoracic massage combined with intrapericardial injection of adrenine can revive the heart in practically any case of chloroform poisoning in the rabbit, even though the treatment be not begun until fifteen minutes or more after the heart has completely ceased to beat.

"In about 70 per cent. of cases recovery can be obtained if treatment is commenced ten minutes after arrest of the heart by the following procedure: artificial respiration through a tube in the trachea; intrapericardial injection of adrenine; massage through an opening in the abdomen. If, when the heart has been started, the blood pressure continues low and the heart beats remain (chiefly as a consequence of this) feeble, speedy and permanent improvement of the heart and blood pressure can be obtained by intravenous injection of either adrenine or pituitrin.

"Treatment on these lines is suggested for cardiac arrest in the human subject, occurring either in chloroform poisoning or in other conditions in which general recovery might be anticipated to result from resuscitation of the heart."[1]

Before the publication of our paper the expression "massage of the heart" had been used as if the manner of performing it were indifferent, but we found experimentally that attention to points of detail may make all the difference between success and failure in difficult cases of resuscitation of the arrested heart. The grounds for certain of the conclusions given above may therefore be of value.

One question of the first importance is this, that "rhythmic compression of the heart effects in the first place an artificial circulation; it produces movement of the blood in the vessels to an extent which depends upon the way in which it is done." In animal experiments such as we performed an indication of the mechanical efficiency of massage in effecting a circulation of the blood could be obtained (the blood pressure being at zero) by the amplitude of the wave of blood propelled into the aorta by each compression of the heart. A record of this wave was obtained by a mercury manometer connected with a carotid artery. But a more direct proof of the fact that massage of the heart acts, to begin with, as a substitute for the spontaneously beating heart in causing a circulation of the blood was obtained in the following way: A solution of a blue-green dye "was injected into the cavity of the right ventricle of an arrested heart. Cardiac massage was then performed, and after a few compressions the blue-green colour appeared first in the lungs and then in the carotid artery. Massage had therefore propelled the blood from the right ventricle through the lungs and left side of the heart into the systemic circulation."

Fisher describes this action of massage as "an influence upon the circulation that I have not seen previously observed." It is all the more interesting that he has described independent observations on the same phenomenon but judged by different effects—namely, flushing of the skin and rise of intraocular tension occurring as the result of massage prior to spontaneous beating of the heart.

This action of massage has an importance not merely academic. I have started the heart beating an hour after it has been arrested by chloroform. I have perfused the exsected heart of a stillborn child four hours after the child was born, and started the heart beating again. The difficulty is not so much in starting the heart, though this may of course be difficult, but in starting the heart sufficiently soon that the other tissues have not meantime been rendered incapable of recovery by stoppage of the circulation. So far as is known, it is the cells of the central nervous system that are most susceptible to stoppage of the circulation, so that, from the practical point of view, the circulation must be started before the cells of the central nervous system are irretrievably damaged. The current opinion is that after complete stoppage of the circulation for about fifteen minutes the cortical cells cannot be revived. While my own experiments have also pointed to this conclusion, I am not convinced that it is true; and, for reasons that I need not enter into here, I should not be surprised if some day it were shown that even the cortical cells can survive arrest of the circulation for a much longer period. What is

known is that they are difficult to revive. It is not proved that they are dead.

Many other tissues can withstand absence of circulation for a long period. Thus I have revived the movements of the isolated guinea-pig's uterus after seven days' keeping in cold storage, and the human Fallopian tube after thirty hours;[2] the rabbit's intestine after five days;[3] the human vermiform appendix after thirty-six hours;[4] and the heart after twenty-four hours[5] or longer. At higher temperatures they do not survive so long,[3] but even at temperatures between ordinary room temperature and body temperature they survive for hours. In tissues such as these there need be no anxiety in regard to the possibility of restoring their functioning capacity after prolonged arrest of the circulation. The liver requires further investigation.

In the meantime the question of resuscitation may be taken to depend upon how long the cortical cells can survive arrest of the circulation. And it is in this connexion that there arises the importance of the capacity of cardiac massage to act as an artificial circulation. For the difference between complete and incomplete stoppage of the circulation is enormous when gauged by the effects on the cells of the central nervous system. It has been found, for example, that when an attempt has been made to occlude the cerebral circulation by clamping the vessels to the brain, much more prolonged survival of these cells may occur if a mere trickle of blood through a small vessel be intentionally or accidentally left. Other phenomena point to the same conclusion. For example, in hibernating animals both circulation and respiration are reduced to a very low level for months, and yet the animals revive rapidly and completely when the circulation and temperature, etc., are restored. Now the experiments by Martin and myself are confirmed by Fisher's observations, and it can be taken as proved that massage of an arrested heart, if properly performed, can act as a fairly effective mechanical means of conducting an actual circulation of the blood. This being so, it is more than probable that, for the purpose of deciding whether the cells of the central nervous system are capable of complete restoration or not, the time can be calculated not as from the start of spontaneous heart beats but as from the time of beginning massage. This is a point of fundamental importance, and puts a different and more hopeful complexion upon the whole question of resuscitation.

Method and Rate of Compressing the Heart.

In the paper already quoted we said further:

"Judged merely from the point of view of its acting as an artificial circulation, massage would be most efficacious when carried out uninterruptedly, because the maximum amount of circulation of blood would thereby be accomplished, and therefore the speediest elimination of chloroform. However, we have repeatedly found that this is not the case, the reason being that this procedure fails to take due cognizance of the second function of massage—that, namely, of acting as a mechanical stimulus to the heart itself. The latter is the real object aimed at in performing massage; and, though a mechanical circulation may be a necessary preliminary to obtaining conditions under which the heart can resume its action, it is clear that, even from the point of view of circulating the blood, cardiac massage is an inadequate substitute for the beating heart. It is essential that this mechanical stimulation should be applied in such a way as most effectively to encourage the spontaneous contractions of the heart. This is not attained by continuous massage. It has been found, for example, that massage which has started feeble spontaneous beats, if continued without intermission, may cause the beats to disappear again. No doubt it is possible to overdo mechanical stimulation, and continuous massage does not give the heart a sufficient opportunity of developing spontaneous beating. We have found, as a result of a large number of experiments, that when the feeblest beats have begun, even beats which fail to move the manometer, it is better to cease massage for some seconds so as to allow them to develop, and to apply short periods of massage intermittently, when it is usually found that perhaps by the third or fourth series the heart suddenly regains a normal rhythm and the blood pressure rises rapidly."[1]

The most effective rate of compression is much slower than the normal heart rate, for two reasons: One is that a slow rate is necessary to allow complete filling of the ventricles, and the other that it is a subnormal rate of beat that one is attempting to elicit—namely, the rate at which the arrested heart will begin beating again. The advantage of intermitting massage had not previously been suggested. Possibly if attention were paid to this, attempts to revive the human heart would be more successful.

Action of Adrenalin.

There is no known drug comparable with adrenalin in efficacy to start an arrested heart or to antagonize the action of chloroform. I have shown that adrenalin can start beats in a perfused mammalian heart—for example, when kept for twenty-four hours—when mere perfusion has failed. When the isolated mammalian heart is perfused with concentrations of chloroform or chloral which almost or even completely arrest the heart, the addition of adrenalin to the chloroform or chloral solution is able to restore the heart beats to their normal vigour.[5] This is an extraordinary effect. It is not an antagonism of the type, for example, of atropine *versus* pilocarpine. For chloroform and chloral depress the heart muscle, and in the experiments referred to adrenalin is able to antagonize a concentration of chloroform or chloral which practically or completely stops the heart while the latter solution is still passing through the heart, and its action therefore getting deeper. I do not think that this power of adrenalin—which is equivalent to stimulation of the sympathetic nerve of the heart—to antagonize a *muscular* paralysis has been sufficiently realized.

When the circulation is arrested in the intact animal, the difficulty, of course, is to get the adrenalin at the heart, even intravenous injection being practically useless when the heart has stopped. One method is to inject adrenalin into the pericardial sac before beginning massage, but this might be difficult to one who has had no experience of giving such an injection, and I have myself no experience of performing it in man.

Seeing, however, that massage causes an artificial circulation, adrenalin will reach the heart in time from a vein if massage be continued. This will occur sooner the nearer to the heart the vein is into which the adrenalin is injected. If it were injected into an external jugular vein it would very probably reach the arrested heart after a few effective compressions by massage.

One point in regard to adrenalin which may cause confusion is that a combination of adrenalin and chloroform is, as has been pointed out by Levy, more likely to produce fibrillation of the heart than chloroform alone. This, however, refers only to cardiac arrest from chloroform occurring in the initial stages of anaesthesia. This danger does not occur, in my opinion, in cardiac arrest occurring at other times.

There is another point in regard to the action of adrenalin about which there seems to be a good deal of misconception, and that is as to the permanence of its effect. It is true that in the normal animal with a good blood pressure the rise of blood pressure produced by adrenalin is very transient, lasting only a few minutes. But this is not true in certain abnormal conditions of the circulation—for example, when the animal is being resuscitated after arrest of the heart. Here the blood pressure may remain low after spontaneous beats of the heart have begun. This low blood pressure is due partly to temporary paralysis of the vasomotor centre and partly to feebleness of the heart's contractions. These two effects interact on one another. This vicious circle is broken by adrenalin. The temporary rise of blood pressure provides a better blood supply to both heart and vasomotor centre, and this may be sufficient to enable both to function properly, and in these circumstances the rise of blood pressure produced by adrenalin may be permanent. I believe it may be so in other similar conditions of the circulation.

Figs. 1 and 2 are reproduced (by permission) from the paper referred to. They show the sequence of events in a difficult case of restoration of the heart after it had been arrested by chloroform, and massage begun fifteen minutes later. The effects of intermittent massage are shown and the permanent effects of adrenalin injection.

Artificial Respiration in Man.

I have taught my students for years that the time will come when every hospital will be provided with an appliance for mechanically performing artificial respiration in man. So far this prophecy has remained unfulfilled. The usual method employed in the laboratory for this purpose in the case of laboratory animals is a pump or bellows which forces air into the trachea, and so distends the

lungs. It is a method theoretically imperfect, which in practice works well and gives no trouble. I have seen it stated in physiological textbooks that this method of performing artificial respiration is inadmissible in man, but I have not seen any convincing evidence given for this statement. In the case of adults with very rigid chest walls there would be theoretical objections to it, but, with the patient in the horizontal position, very probably an excursion of the lung sufficient to give the minimum necessary aeration of blood could be obtained by that expansion of the lung allowed by little else than movement of the diaphragm. If necessary, oxygen could be used instead of tube. It was this method that I used in resuscitation experiments on rabbits.

If the heart has stopped, for example, in the course of chloroform anaesthesia, to get the heart started again is only the beginning of resuscitation. The next thing is to get the natural respiration evoked. Now when the circulation has been stopped for several minutes, the respiration does not commence immediately upon the heart beginning to beat again. It takes time for the respiratory centre to recover. In animal experiments I have seen thirty minutes elapse between the starting of the spontaneous heart beats by massage and the beginning of

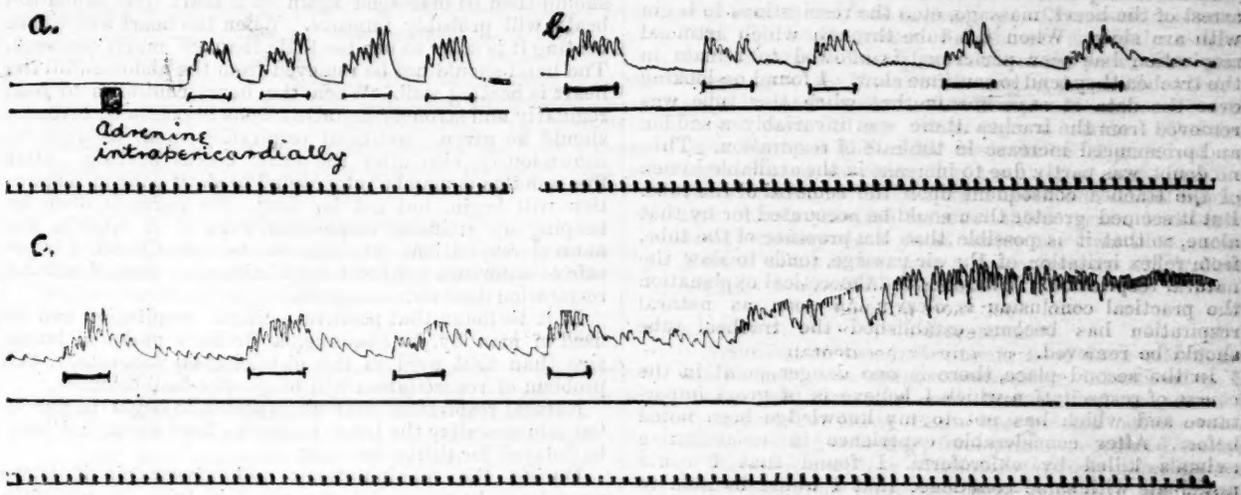

FIG. 1.

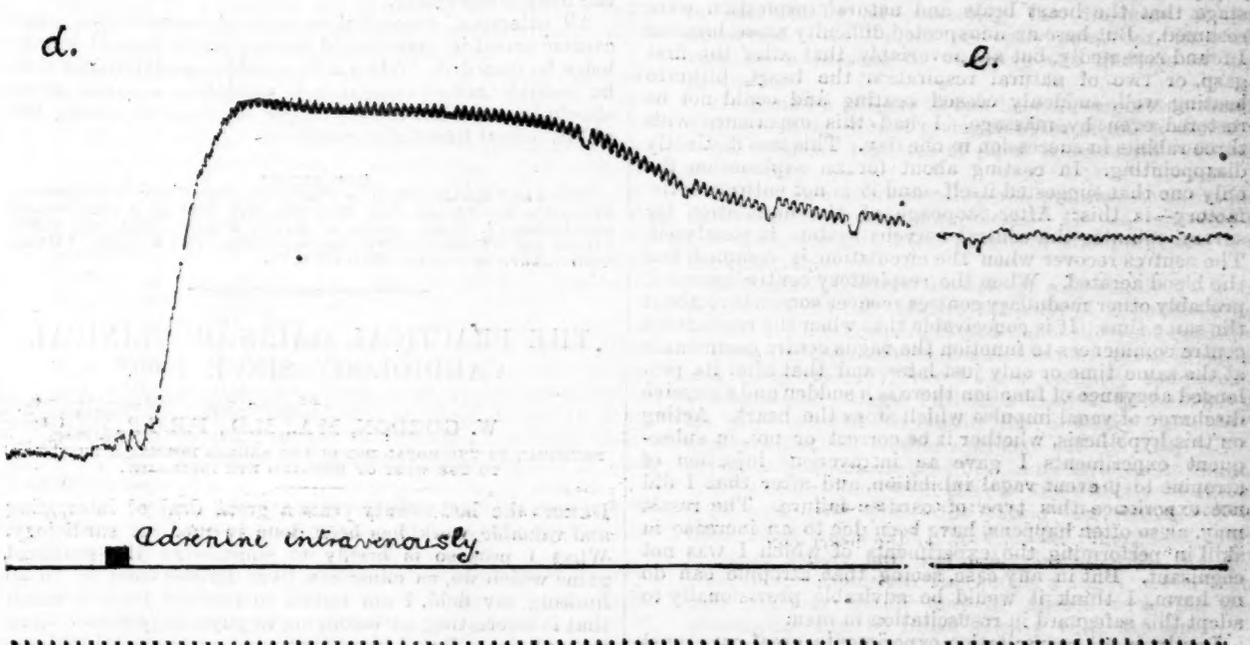

FIG. 1.—Rabbit. Heart arrested by chloroform. Showing complete resuscitation, manometer record of blood pressure, and pulse wave in carotid artery. The periods of massage are marked. By the end of Fig. (*b*) feeble spontaneous beats had commenced, and by the end of (*c*) the heart was beating regularly. Blood pressure remained low. Intravenous injection of adrenine produced an abrupt rise of pressure (*d*). The pressor effect was maintained (*e*, taken twenty minutes later).

air. But, in any case, in children the method of positive artificial respiration ought to prove just as serviceable as in animals like the dog.

Having in view the possible adoption of this method of performing artificial respiration in man in cases of resuscitation, etc., I have modified the usual technique in order to dispense with tracheotomy and the time involved in performing it. Instead of tying a short cannula into the trachea through a tracheotomy opening, a long tube is passed through the mouth and larynx down to just above the bifurcation of the bronchi. This tube should be of about two-thirds of the internal diameter of the trachea. When intermittent positive artificial respiration is used—for example, by a Brodie's pump—each blast distends the lung and the air escapes along the outside of the tracheal natural respiration. More usually it is between five and ten minutes. If artificial respiration is not carried on during this interval, the heart will of course fail again from asphyxia. It is therefore imperative that artificial respiration should be kept up after the heart has begun beating again and until normal respiration begins.

There is no question that the problem of resuscitation is enormously facilitated by the employment of mechanical artificial respiration. With an apparatus such as Brodie's respiration pump with its modern improvements, whereby the amount of air pumped and the rate of pumping can be altered at will, and the air warmed or charged with a volatile anaesthetic if desired, one has no anxiety with regard to the respiration. Artificial respiration can be intermitted and restarted in a moment. If it be found

possible to use this method in man—and I shall be convinced of the impossibility only when I see it fail—there would be a great increase in the percentage of recoveries after attempted resuscitation in man.

Other Factors requiring Attention in Resuscitation.

In experiments which I performed in the latter part of 1915 I found that there were certain other points which have an important influence on the speed and completeness of resuscitation, and which I may take this opportunity of pointing out.

In the first place, when natural respiration begins (after arrest of the heart, massage, etc.) the respirations to begin with are slow. When the tube through which artificial respiration has been performed is allowed to remain in the trachea they tend to continue slow. I found on looking over the data of experiments that when this tube was removed from the trachea there was invariably a sudden and pronounced increase in the rate of respiration. This, no doubt, was partly due to increase in the available lumen of the trachea consequent upon the removal of the tube. But it seemed greater than could be accounted for by that alone, so that it is possible that the presence of the tube, from reflex irritation of the air passage, tends to slow the natural respiration. Whatever the theoretical explanation the practical conclusion is clear: As soon as natural respiration has become established the tracheal tube should be removed.

In the second place, there is one danger point in the course of resuscitation which I believe is of great importance and which has not to my knowledge been noted before. After considerable experience in resuscitating animals killed by chloroform, I found that I could anticipate with some confidence that I would be able to resuscitate an animal, by the methods described, to the stage that the heart beats and natural respiration were resumed. But here an unexpected difficulty arose, because I found repeatedly, but not invariably, that after the first gasp or two of natural respiration the heart, hitherto beating well, suddenly ceased beating and could not be restored even by massage. I had this experience with three rabbits in succession in one day. This was distinctly disappointing. In casting about for an explanation the only one that suggested itself—and it is not entirely satisfactory—is this: After stoppage of the circulation for several minutes the central nervous system is paralysed. The centres recover when the circulation is resumed and the blood aerated. When the respiratory centre recovers, probably other medullary centres recover somewhere about the same time. It is conceivable that when the respiratory centre commences to function the vagus centre commences at the same time or only just later, and that after its prolonged abeyance of function there is a sudden and excessive discharge of vagal impulse which stops the heart. Acting on this hypothesis, whether it be correct or not, in subsequent experiments I gave an intravenous injection of atropine to prevent vagal inhibition, and after that I did not experience this type of cardiac failure. The result may, as so often happens, have been due to an increase in skill in performing the experiments of which I was not cognisant. But in any case, seeing that atropine can do no harm, I think it would be advisable provisionally to adopt this safeguard in resuscitation in man.

Lastly, in all resuscitation experiments great care must be taken to maintain the body temperature. After stoppage of the circulation and temporary paralysis of the whole central nervous system, the animal does not easily recover its power of heat regulation.

SUMMARY.

To sum up, I would venture to lay down the following directions for resuscitation in cardiac arrest in man or animals, whether from chloroform anaesthesia or from any other condition in which cardiac arrest is "accidental."

If the heart has stopped, artifical respiration should be resorted to immediately by the usual methods. If, at the end of three or four minutes, no pulse can be felt, and especially if no heart beats can be heard on auscultation, adrenalin should be injected into an external jugular vein, by an assistant if available; if no assistant be available, I believe the gain from adrenalin more than compensates for the loss of time, provided the materials are at hand, as they ought to be. In the meantime, or subsequently, as the case may be, the abdomen should be opened high up, one hand inserted in the opening, passed up over the left lobe of the liver, and the heart felt for above the diaphragm. The heart should then be massaged intermittently. I endorse all that Mr. Fisher says in regard to not relying upon artificial respiration alone and in regard to boldness of procedure if the heart has stopped. When it has stopped there can be no further risk. As soon as spontaneous beats of the heart, however feeble, are felt massage should be interrupted for several beats to allow the contractions to establish themselves; otherwise, continuous massage may abolish them again. The heart should then be massaged again for a short time, when the beats will probably improve. When the heart has begun beating it is safer to use too little than too much massage. The hand should not be removed from the abdomen till the heart is beating well. When the heart continues to beat regularly and strongly an intravenous injection of atropine should be given. Artificial respiration must be kept up continuously, also after the heart begins beating. After five minutes it may be interrupted to see if natural respiration will begin, but not for long. No harm is done by keeping up artificial respiration, even if it inhibits the natural respirations, whereas, on the other hand, it is not safe to interrupt artificial respiration very long, if natural respiration does not commence.

If it be found that positive artificial respiration can be used in man by, for example, a Brodie's pump of larger size than that used in the physiological laboratory, the problem of resuscitation will be greatly facilitated.

Natural respiration may be expected to begin in five to ten minutes after the heart begins to beat again, but may be delayed for thirty minutes.

During the manipulations, and afterwards if these procedures be successful, care must be taken to maintain the body temperature.

All attempts, successful or not, at resuscitation after cardiac arrest in man should in the present state of knowledge be recorded. When it is possible—and it cannot well be possible unless assistance is available—accurate notes should be kept not merely of the sequence of events, but of the actual times of occurrence.

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THE PRACTICAL GAINS OF CLINICAL CARDIOLOGY SINCE 1900.*

BY

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DURING the last twenty years a great deal of interesting and valuable work has been done in medical cardiology. What I propose is briefly to summarize the practical gains which we, as clinicians, have derived from it. In so limiting my field, I am forced to exclude from it much that is interesting, as belonging to physiology rather than to medicine. But I hope that what my paper thus loses in attractiveness it may atone for by usefulness.

CARDIOLOGY IN 1900.

I need hardly remind an audience well read in the literature of twenty years ago that all the factors involved in cardiac failure were then clearly recognized; that no one called in question so obvious a truism as that the cardiac muscle was of predominant importance; or doubted the danger of such mechanical impediments as a leaking aortic orifice or a contracting mitral. No thoughtful person then referred to "back pressure" as a cause of heart failure, but only as a consequence and complication of it. Gaskell's brilliant work had shown that the heart muscle was more independent of nervous control than had previously been imagined, and Kent and His had demonstrated the path along which the normal stimuli of contraction travelled. The effects of vascular disease, in and

* Read at a meeting of the Devon and Exeter Medico-Chirurgical Society, to open a discussion, December 16th, 1920.

outside of the heart, were then fully recognized, as were also the injurious consequences of anaemia. The influence of the endocrine glands had begun to be investigated. Poisons, organic and inorganic, of bacterial or other origin, were attracting the attention they deserved. Overstress had been discussed. Malformations had been elaborately described. The infections of the endocardium were being enumerated. It was fully recognized that many irregularities of the pulse were of little consequence, and that some murmurs mattered, whilst others did not. Thus murmurs were divided into "functional" and "organic," and amongst these latter the decided differences in seriousness were carefully indicated; the minor significance of irregular pulse in childhood had not been overlooked, intermissions were usually held to need no treatment, and "delirium cordis" was regarded as a special indication for digitalis—although it must be noted that in mitral stenosis the continued administration of the drug was often found badly borne. Our excellent existing classification of cardiac diseases had been already built up and almost all our present remedies were in familiar use.

Our Gains Since.

I will divide my material into the following sections: Treatment, prognosis, diagnosis, physical signs (detached for convenience), and etiology.

Treatment.

Dr. Caton has added an important chapter to the subject of *preventive medicine* by showing how we may prevent many cases of incipient rheumatic endocarditis from passing into permanent valvular disease by prolonged rest in bed, the administration of sodium iodide and the application of blisters.

Dr. Arthur Goulston, by his ingenious use of *cane sugar*, has given us a valuable aid in dealing with chronic heart failure. It is noteworthy that beet sugar is without effect and that the cane sugar must not be cooked.

The intravenous use of *strophanthin* in urgent cases has been found of unmistakable value. *Theocin sodium acetate* has proved its usefulness in dropsy which has not yielded to other diuretics. Sir Lauder Brunton's insistence on the importance of *morphine* in the distressing *dyspnoea* of late heart disease has promoted its general use in that condition, and the discovery of the immediate value of its hypodermic injection in *acute pulmonary oedema* (which occasionally occurs in cardiac patients) has put a valuable weapon in our hands. In "soldier's heart" *graduated exercise* has expedited the generally slow recovery.

Strychnine has been unduly discredited. Surgical shock, in which it has been rightly replaced by *pituitrin*, is a different condition from ordinary heart failure, and although there are those who prefer injections of *camphor* in cardiac breakdown, we shall do wisely if we hesitate to discard from our therapeutics a remedy which the sober judgement of competent clinicians has so long relied on.

The use of *salvarsan* in cardiac syphilis appears to have special risks and, if used at all, it should probably be given in smaller doses than ordinary.

In streptococcal endocarditis (the most frequent variety) we have learnt that whereas *anti-streptococcal* serum occasionally succeeds, streptococcal vaccines almost invariably fail. *Standardized digitalis* is a valuable advance.

Three surgical procedures require medical notice. Brauer's operation of "*cardiolysis*" is of service where a heart is gravely hampered by adhesions of the pericardium to the chest wall. *Direct massage of the heart* through the diaphragm, in cases of heart failure under operation, has been the means of restoring life. *Incision of the pericardium* seems at last to be recognized as a safer proceeding than the older paracentesis.

Prognosis.

The prognosis of *cardiac syphilis* has received a good deal of attention, and would seem to be very unfavourable. Dr. Mitchell Bruce has stated that only 50 per cent. of the cases improve at all, and that 20 per cent. die within a few years. Patients with syphilitic aortic disease, he finds, generally die within a little over five years. Adler and Weber, however, believe that early treatment may cure. All authorities insist on prompt and vigorous measures. Perhaps now that fuller means of diagnosis are at our disposal, as in the Wassermann reaction, earlier recognition may lead to a better outlook.

In 1898 a distinguished authority, whose experience was chiefly derived from a great industrial area, wrote that cases of *aortic regurgitation* had never, in his recollection, survived for fifteen years. This was so different from Devonshire experience, and from experience in other non-industrial centres, that the discrepancy suggested that possibly great local differences in general expectation of life might be showing themselves incidentally in cardiac patients. Accordingly, in 1909, I examined the proportion of the population which survived to 75 and over in all the registration districts of England. The result was remarkable. In Leeds, where the shorter survivals alluded to were observed, only 6 per cent. of the population reached those ages, in Manchester only 2 per cent., whereas in some Devonshire districts, such as Axminster and Crediton, 25 per cent. did so. Since then a number of observers have repeated the older observation of cases of aortic regurgitation surviving for twenty-five and even thirty years; and a case of combined aortic and mitral regurgitation, which survived for over thirty years, had been for nearly twenty-eight years under my own observation in Exeter. This fact of *local prognosis* is one which, I would suggest, needs further attention.

Diagnosis.

A number of new instruments have been added to our equipment. The *sphygmomanometer*, introduced a little before 1900, has only come into general use since that time, and Dr. Batty Shaw has pointed out its value in distinguishing secondary from primary cardiac disturbance.

The *x rays*, with or without *orthodiagraphy*, are necessarily becoming more and more a help in the examination of our cases. Especially useful have they been in establishing or correcting the diagnosis of aortic aneurysm. As I shall presently point out, they afford valuable assistance in verifying the findings of digital percussion.

Mackenzie's *polygraph* has been an important means of distinguishing—and of giving us other means to distinguish—the different varieties of pulse irregularity. To this I shall return.

Einthoven's *electrocardiograph* promises to assist in the unravelment of certain problems. As yet, however, it is difficult to see that it has proved of much practical use to the clinician.

Leyton's *differential stethoscope* may enable us to compare clinically the relative intensity of a patient's heart sounds at different periods and under different conditions.

Even the older modes of auscultation admit of revision and comparison. Thus I have recently compared the old-fashioned "single" straight wooden stethoscope with its more popular successor, the ordinary "double" or binaural flexible stethoscope, and both of them with the almost discarded method of "immediate auscultation"—that is, of listening with the ear laid directly on the chest wall with only some thin fabric intervening. I have found that whereas a slight mitral regurgitant murmur is more loudly and distinctly heard with the double stethoscope than with the single, a slight aortic regurgitant murmur which may be missed with the double stethoscope can be heard clearly with the single; also that an aortic regurgitant murmur may be occasionally inaudible to both these stethoscopes and yet be made out unmistakably by immediate auscultation. This applies to both the upright and recumbent postures.

Sir William Osler's spots in malignant endocarditis were, I believe, discovered within the period we are discussing.

The *oculo-cardiac reflex*—which, by the way, may be lost in locomotor ataxy—may furnish us with a means of checking a heart rate just too rapid for exact examination.

In the absence of mitral stenosis or of recent vigorous exertion it appears to me that the presence of a *distantly heard first heart sound*—by which I mean "heard without a stethoscope at a distance greater than the length of the ordinary straight wooden stethoscope, that is, about 7 in."—is strongly suggestive of hyperthyroidism.

I think there can be no doubt that whilst the importance of symptoms has been rightly insisted on for many years and directions have long been given for examining hearts

after some brief exertion, the routine care, now in general use, of inquiring into evidence of cardiac failure from the degree of exertion needed to produce distress, as also the present routine of re-examining hearts after exertion, is mainly owing to the insistent teaching of Mackenzie and his school.

PHYSICAL SIGNS.

I. *On Pulse Abnormalities.*

We are chiefly indebted to Sir James Mackenzie and Dr. T. Lewis for the brilliant investigation of pulse abnormalities by graphic methods. The subject is most interesting and has engaged many able workers for several years past. If one cannot admit all the clinical claims which enthusiasts have made for their scientific results, it is not that one does not recognize the general debt we owe to their skill and labour.

Total Arrhythmia.—Dr. Lewis has made the interesting discovery that this well-known accompaniment of cardiac failure is caused by fibrillation of the auricle, a condition in which the auricular fibres contract in such separate and inco-ordinate fashion that the auricle as a whole stands still. As a scientific explanation of the auricular inaction and the coincident total arrhythmia of the ventricle, this is an important piece of work. But clinically it has, so far, had very little effect. As regards diagnosis, the condition underlying it has still to be determined by other and older methods; in prognosis, a condition which may end in a few weeks, or may last for years with little apparent detriment, cannot be regarded as very helpful; whilst in treatment it is difficult to see how its recognition has affected us at all.

Heart-block.—Perhaps no chapter in cardiology is more fascinating than that which, beginning with Gaskell's researches, has included such fine work as has been done by Kent and His, Tawara, Erlanger, Keith, Mackenzie, and Lewis—to mention only a few. In the future we may hope for clinical results, such as will aid us in the prognosis and treatment of the condition evidenced by the Stokes-Adams syndrome, but at present we stand as we did.

Intermissions.—Except that the premature dwarf contractions, which our stethoscopes alone formerly detected, are now called "extra-systoles," we have made no practical progress in our knowledge of these. But it is a gain to have recognized that intermissions may be due to pauses of the whole heart or to occasional heart-block.

Paroxysmal Tachycardia.—We have learnt that one variety, due to "auricular flutter," is amenable to large doses of digitalis, which convert the flutter into auricular fibrillation, which in turn, on discontinuance of the drug, reverts to the normal rhythm. In other varieties we seem to be much where we were.

Pulsus Alternans.—This sign, originally described by Traube, has lately been assigned a most serious significance. Yet so able an observer as Sir William Broadbent wrote in 1897, "I have learnt not to attach serious importance to the regular alternation of a strong and weak beat, so long as there is no great frequency with it." Carver has lately recorded its occurrence in persons with no apparent cardiac lesion, and stated that it may disappear, leaving the patient apparently none the worse. Which view of its significance is correct?

Sinus Arrhythmia.—Here we are clearly indebted to the graphic methods. They have made precise the meaning and diagnosis of this usually harmless form of irregularity. Sinus arrhythmia is a vagal irregularity, its rhythm starting, as it normally should do, from the sino-auricular node and involving the whole heart. Its pulse rate rarely exceeds 100, and more usually is as low as 60 or 50, whilst anything which quickens the pulse, such as exertion or rise of temperature, removes the arrhythmia. Atropine (which has no effect on auricular fibrillation), by its action on the vagus, removes it. With the three exceptions mentioned below it needs no treatment, not even change of habits. It is the common irregularity of childhood up to 10, a period in which premature contractions are unusual, heart-block rare, and auricular fibrillation very rare. It is less common in adults. When, as is the rule, there is an obvious relation to respiration, ordinary or deep, says Dr. Lewis, its nature is evident; a gradual waxing and waning of rate is always highly suggestive, if not conclusive. The radial beats and apex beats correspond; the heart sounds show no trace of extra-systoles. The pulse beats are full and equal in amplitude.

There are, however, three varieties in which there is no association between the pulse irregularity and phases of respiration—namely: (1) Sudden prolonged pause of the heart beat, usually with syncope—a rare condition. (2) Relatively abrupt slowing of the whole heart to 20 or 40 beats a minute with fall of blood pressure, which Lewis believes is the commonest cause of fainting attacks in adults. (3) Variation of pulse rate in phases lasting ten, fifteen, or more seconds—uncommon, sometimes following large doses of digitalis or its congeners, sometimes apart from these. All these are due to vagal influence and are removed by atropine—a valuable therapeutic indication.

It is noteworthy that Dr. Watson-Williams has observed that well marked respiratory undulations in a boy's pulse "implied, if anything, that he would make a good sportsman."

II. *Influence of Respiration on Murmurs.*

It has long been taught that systolic heart murmurs which are obliterated by a deeply-held breath should be suspected of being exocardial (so-called "*respiratory murmurs*"), that is, negligible so far as the heart is concerned. I have, however, recently found that a deep-held inspiration is capable sometimes of obliterating the soft diastolic murmur of slight aortic regurgitation in young adults. The chief significance of this lies in the doubt it casts on the present interpretation of systolic "respiratory" murmurs.

III. *The Influence of Posture.*

The advice to examine heart patients both erect and recumbent is old, yet it was rarely followed until recently. "Scientific" accounts of cases, twenty years ago, were constantly being published with no note of the posture at the time of observation. No ordinary textbook that I know of prior to 1906 (when I published what I believe were the first observations on the effect of posture on the normal cardiac sounds and on the normal cardiac dullness), and few since, have said a word about posture in percussion—Broadbent's book does not once allude to it! Only Dr. Blackhall-Morison, in his work on *Heart Failure* (1897), gave a figure illustrating the change in the dullness in a case of mitral disease (the first such figure, I believe, ever published), and added this admirable statement: "Whatever method be pursued in determining the dimensions of the heart by percussion, it is of the first importance that the posture of the patient should, so far as possible, be exactly the same on successive occasions when this point is under observation."

For the following additional points I have made myself responsible:

1. That the *real width of the heart* is most closely determinable by percussion when the patient is erect.

2. That in cases of enlarged heart the *difference in the dullness* produced by change of posture from the recumbent to the erect may be relatively great; three examples will suffice:

	Erect.	Recumbent.
Case A.	9 in.	... 5 in.
Case B.	8¼ in.	... 4½ in.
Case C.	8 in.	... 5 in.

These show what confusion may arise from examining the patient in different positions on different occasions.

3. That this difference is chiefly due to the change in the *rightward edge of dullness.*

These three facts have recently been made abundantly evident by *x*-ray photographs, in which the lateral limits of dullness, previously percussed out in the two positions, have been marked by pieces of metal attached to the chest wall.

4. That the *presystolic murmur of mitral stenosis* is sometimes only audible in the erect position.

5. That the *systolic murmur of aortic stenosis* is sometimes only audible in the recumbent position.

6. That an accentuated and *reduplicated second sound* over the pulmonary artery is best heard in recumbency and that sometimes the reduplication is only evident in recumbency.

7. That the *cavity of the chest* is usually appreciably deeper antero-posteriorly in the upright than in the recumbent position. Dr. Blackhall-Morison's luminous remark, that a much-enlarged heart has to be considered as a form of intrathoracic tumour, lends importance to

this fact. Also, from a consideration of the differing influence of posture on the best-known heart murmurs together with this effect on chest depth, it has been possible for the first time (1902) to supply a rational explanation of the influence of posture on heart murmurs—namely, that it is due, in part to the effect of gravity on the intracardiac currents, and in part to the change in the chest depth. It is necessary to recall this explanation, as it has recently been misquoted.

8. That what I have called *distantly-heard heart sounds* are more distantly heard in recumbency. Thus in a case of Graves's disease, the first sound was audible 5 ft. away in the recumbent position, but only about 2 ft. away in the erect.

9. That from all the above considerations it is clear that no important cardiac case is properly examined or described in which posture is left out of account.

10. That in certain cases of *cancer*, especially cancer of the digestive organs and in their later stages, the recumbent cardiac dullness (R. C. D.) is remarkably diminished (to under 2 in., or more typically to about 1 in.), or even altogether lost. This "*cardiac sign in cancer*" I have found of great value in the diagnosis of obscure cases. In one series of fifty cases there was only 6 per cent. of error.

Another, and a very interesting effect of change of posture, is that described by Dr. Blackhall-Morison, which he considers valuable as a warning of grave heart failure. It is that the crepitations of pulmonary congestion, if heard at one lung base, can be transferred at once to the base of the other lung by turning the patient on to the opposite side from that on which they were first audible.

Dr. Batty-Shaw has used change of posture to distinguish the *pulmono-arterial diastolic murmur*, due to high pulmonary pressure. In the erect posture this murmur, being heard alone, might be taken for the murmur of aortic regurgitation. "Recumbency will, however, change the whole picture and reveal the presence of an obstructive or of a double mitral murmur."

ETIOLOGY.

The most important etiological study has been that of the so-called "*soldier's heart*"—the "irritable heart" of Da Costa in the American Civil War—for which the late war has furnished a superabundant mass of material. In its most striking form the signs of structural heart disease are absent, but the patient is short of breath on exertion, easily exhausted, and complains of palpitation, precordial pain, giddiness, and more rarely of actual fainting; exertion, excitement, and sometimes change of posture, unduly hurry his pulse, and this hurried pulse is unduly long in returning to its normal.

In other cases there may be slight cardiac enlargement, with soft systolic murmurs, sometimes perhaps due to relative incompetence, or being sometimes "haemic" or "respiratory" in character. Now and then the syndrome may be superposed on actual structural heart disease.

At first the condition was attributed to physical overstrain, and especially the overstrain of men unaccustomed to strenuous exertion suddenly submitted to arduous military training, aggravated perhaps by excessive cigarette smoking. But as the war went on it was noticed to follow on various infective diseases, on mental shock, and on exposure to great heat of climate. Cardiac drugs were found useless, and rest was then thought to be the only remedy. The cases were, as Da Costa had recorded, exceedingly obstinate. Presently the disease appeared amongst the women undergoing anxiety at home, and its psychical aspects came more clearly into view.

Present-day opinion may perhaps be briefly thus stated. It is a condition of neurasthenia in which the heart is especially affected, depending in part on inherited physical and psychical defects, and more immediately on infective toxaemia (as from enteric, malaria, trench fever, amoebic dysentery, tuberculosis, influenza), or on exposure to high temperatures, the cumulative strain of fatigue with insufficient food and sleep, or great nervous shock or stress, associated sometimes with endocrinic disturbance (thyroid or adrenal), the psychical factor becoming evidently more and more important as observations accumulate. Rest, though useful, indeed necessary, at first, has later been superseded, after a sufficient interval, by carefully graduated exercises, carried on amidst the curative psychical atmosphere of a busy and successful treatment centre. For such "vagal" symptoms as fainting, with slow, feeble pulse, atropine has been used with advantage. But the disease remains exceedingly refractory. Many cases are still uncured, and many have only recovered after many months. The majority may, however, be perhaps regarded as recovered.

Speaking with much diffidence from a limited personal experience I cannot but think there are possibly several types still not disentangled. For I have seen cases which seemed obviously associated with hyperthyroidism, and others equally suggestive of toxaemia with no obvious endocrinic change—one such I afterwards heard was fatal from syncope.

For the rest, still uncured, we may well continue to hope; but Da Costa's experience that 28 out of 200 afterwards developed "cardiac hypertrophy," and the record of some writers on the Balkan war cases (quoted by Dr. Carey Coombs) that "premature arterio-sclerosis" (probably the same condition as Da Costa's) commonly occurred as a sequel, must be borne in mind. It will be important to determine, if we can, what particular causes have been connected with the cases in which such a sequel shows itself.

In conclusion, gentlemen, I hope that the shortcomings, which you cannot but find in this very condensed summary, will meet with the excuse that my material has been exceptionally difficult to deal with. If in anything I have seemed too frank, I hope I have at least not failed to be fair.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

RADICAL CURE OF FEMORAL HERNIA BY THE INGUINAL ROUTE.

LIKE the majority of surgeons, I have for many years operated upon femoral hernia by the ordinary methods through the saphenous opening. Two or three years ago my attention was called to the method of operating by the inguinal route, and I have no hesitation in strongly recommending it. Mr. Percival Cole's description of the operation in the BRITISH MEDICAL JOURNAL of June 21st, 1919, is an excellent one and should be followed.

The advantages of this method are: (1) The greater likelihood of a permanent cure, for the ordinary operation, even in the hands of experts, is attended by frequent recurrence, and I have at present under my care a woman with a femoral hernia upon whom six unsuccessful operations have been performed by hospital surgeons. (2) A thorough examination of the gut can be carried out, and, if necessary, the gut can be resected. Quite recently I drew down and repaired the places which had been damaged in a tightly strangulated hernia. By the old method this could only have been done by weakening the ring, with the probability of a speedy return of the hernia. (3) Abnormal vessels are avoided. This may not be of much importance, but quite recently I tied the obturator as it curved round the neck of the sac.

There are also disadvantages. It is a rather more difficult operation than the ordinary one, and I have found the passage of the needle when suturing Cooper's ligament to the conjoined tendon troublesome, especially in stout patients. It is easier in females than in males, as in the latter the cord obstructs. In a recent textbook the operation is not, in my opinion, correctly described, for whereas the conjoined tendon should be sutured to the posterior border of the ring, the book in question describes the suture of the ring itself and does not mention the conjoined tendon.

Liverpool. G. P. NEWBOLT, C.B.E., F.R.C.S.Eng.

ECTOPIA VESICAE SUCCESSFULLY TREATED BY TRANSPLANTATION OF THE TRIGONE INTO THE SIGMOID.

MANY operations have been devised to remedy this distressing condition, but few have proved satisfactory. None of the many attempts to restore the bladder by plastic operations has answered the purpose; it is impossible to reconstruct the sphincter, and the operations have added

little, if anything, to the comfort of the patient. Attempts to transplant the ureters into the sigmoid or rectum have sometimes succeeded, but the great objection to all operations of this kind is the very serious risk of infection spreading along the ureter to the pelvis of the kidney.

It is essential that the valvular action of the ureteral orifices should be preserved, and this can apparently be secured by the operation described by Maydl in 1896, in which the trigone of the bladder is transplanted into the sigmoid flexure of the rectum. Such an operation was recently performed by myself, and the result up to the present time has been completely satisfactory.

A girl, aged 6, was admitted to the East Suffolk Hospital in May, 1920; the operation was performed on June 2nd. The upper three-quarters of the bladder was completely removed by a semicircular incision through the skin just outside the junction with the vesical mucous membrane, extending into the peritoneal cavity; the incision was carried across the base just above the trigone, and the abdominal cavity plugged with a gauze pad.

The base of the bladder, an elliptical area of 1½ in. across by ¾ in. vertically, including the trigone and the ureteral orifices—situated ¼ in. from each end of the transverse diameter—was then raised by dissection, care being taken to avoid stripping the ureters and interfering in any way with their vascular and nervous supply. A loop of the sigmoid could easily be brought down to the level of the raised trigone. The loop being clamped, a longitudinal insertion was made along it through the sero-muscular coat, and the posterior surface of the upper margin of the portion of bladder was sewn to the bowel about ¼ in. from this line by a continuous Lembert suture of fine silk. The bowel was then opened and the mucous membrane of the bladder and bowel were sewn together by a continuous catgut suture passing through the whole wall of each viscus, exactly as in the ordinary operation for gastro-jejunostomy. The silk suture was then continued for the remainder of the circumference through the sero-muscular coat of the bowel and muscular wall of the bladder, in the same way as the operation of gastro-jejunostomy is completed, so that the bladder wall formed part of the wall of the sigmoid, completely closing the gap. The bowel was replaced and the gap in the abdominal wall resulting from the removal of the bladder closed by silkworm sutures. The patient made an excellent recovery; there was no shock and the convalescence was normal.

At the present time—more than five months after the operation—the patient is perfectly well and happy, with a soundly healed scar. The bowel has retained the urine without the slightest difficulty; there has been no leakage or incontinence. The urine is retained all night, from 9 p.m. to 7 a.m., and during the day is passed at intervals of four or five hours.

HERBERT H. BROWN, O.B.E., M.D., F.R.C.S.,
Ipswich. Surgeon to the East Suffolk Hospital.

Reports of Societies.

"DOUBLE UTERUS."

AT a meeting of the Edinburgh Obstetrical Society, held on December 8th, 1920, with Dr. WILLIAM FORDYCE, President, in the chair, Dr. D. ROBERTSON DOBIE read a paper on pregnancy and labour in a double uterus. He discussed the different ways in which this condition may impede labour, and described an illustrative case. On examination after the onset of labour the vagina was found to be blocked by what seemed a pedunculated mass. At a later examination only did the actual condition become clear. By this time the foetal head had come down, but it was held by a band, like a strong adhesion, crossing the vagina. This was the septum between the two cervices, and had to be divided before delivery was possible. The extraction was then accomplished with forceps. After delivery the pedunculated mass that blocked the canal in the early stages was found to be the unimpregnated uterus, the cervix of which had been driven down to the vulvar outlet.

Dr. HAULTAIN referred to the great difficulty in diagnosis presented by these cases. He mentioned a case where the unimpregnated half of the uterus had been mistaken for a fibroid and had been removed. Dr. BALLANTYNE pointed out that the expression "double uterus" was a misnomer, as the condition was really one of two half uteri.

Dr. HAIG FERGUSON referred to a case in which the patient aborted from one half of the uterus at three months and six months later was delivered of a full-time child from the other half. Dr. LACKIE recorded a case where a thick band, similar to that in Dr. Dobie's case, blocked the canal. In another case the patient menstruated from one side one month and from the other side the following month.

Dr. H. R. A. PHILP then gave a communication on obstetric practice amongst the Akikuyu tribe of Kenya Colony, British East Africa.

He described the ceremonies which are carried out at the initiation of the girls into the tribal life. The most barbarous of these consists in the removal of the external genital organs. The girls are lined up in a sitting posture with the legs separated, whilst an old woman passes from one to the other and, regardless of their cries, removes the labia with a sweep of her knife. This is an invariable practice in the tribe, although the missionaries are making every effort to stamp it out. Another barbarous custom is the sending of difficult labour cases into the bush to die.

Reviews.

ORTHOPAEDIC AND REPARATIVE SURGERY.

MORE than fifty surgeons have combined to make public the fruits of their experience of modern orthopaedic and conservative surgery in the two volumes of *Chirurgie Réparatrice et Orthopédique*,[1] published under the direction of Messrs. JEANBRAU, NOVÉ-JOSSERAND, OMBREDANNE, and DESFOSSES, so that this work may be almost considered as a system of reparative surgery. The preface, in which it is truly said that the advance in the treatment of injuries, which took place during the war, must be maintained for the benefit of the injured in peace time, is for the rest a paean of triumph of French surgery; for it all advances made during the war are claimed; no credit, so far as we can find, is given to allied or enemy surgery. But this is a harmless exhibition of national vanity which may be pardoned in the circumstances and which does not seriously detract from the value of the book as a guide to treatment, seeing that the various authors, while sufficiently patriotic, do not hesitate to quote the names of alien surgeons.

It is difficult within the scope of a review to criticize a work of this magnitude adequately, but an attempt to indicate its merits is possible. It deals with the treatment of wounds and injuries of every description in war and peace, in an introduction and sixteen chapters. In addition, it contains an article of 47 pages by Professor Jeanbrau on French war pensions, and the text of the law of March 31st, 1919, on this subject is printed as an appendix. A bill has been introduced in the Senate to extend the provisions of this law to the civil population and to provide the necessary special clinics.

In the introduction Dr. Lemaitre discusses the general principles of the modern treatment of wounds, laying more stress upon the removal of injured tissue and even on excision than on irrigation methods, such as that of Carrel, in the treatment of infected wounds. Professor Patel deals with the operative and orthopaedic treatment of war fractures and the application of these methods to civil practice. In this connexion it is as well to note that in France "orthopaedic" is used as contrasted with "operative" to denote treatment by the use of instruments alone, a sense which is happily obsolete in this country and in America.

Dr. Ledoux-Lebard defines the general principles of the radiological localization of foreign bodies and the proceedings necessary for their extraction. The chapters by Professor Ombredanne on the late removal of projectiles, and particularly those chapters concerned with plastic surgery, on which he is an acknowledged authority, are very valuable. The several chapters on orthopaedic and prosthetic apparatus are welcome, for these are subjects not adequately dealt with in surgical works in the English language. In these chapters Ducroquet, Calvé, A. Trèves, Nové-Josserand, Hendrix, and others describe not only suitable apparatus, but the principles upon which they should be constructed.

Dr. Roux-Berger contributes an interesting and lucid article on the sequelae of wounds of the chest and their treatment by the methods which constitute one of the

[1] *Chirurgie Réparatrice et Orthopédique.* Publié sous la direction de MM. E. Jeanbrau, P. Nové-Josserand, L. Ombredanne, et P. Desfosses, Secrétaire de la rédaction. Paris: Masson et Cie. 1920. 2 vols. (Roy. 8vo. pp. 671; 518 figures, 7 plates. 80 francs net.)

striking advances made by surgery during the war. The boldness of conception and skill in execution of this branch of surgery is well brought out by the descriptions and excellent illustrations in this chapter. Sicard and Froelich write on the post-traumatic sequelae of injuries of the spine and of the contents of the spinal canal, and the latter has some useful pages on the so-called spontaneous lesions of the vertebral column which should be distinguished from the results of traumatism.

The abdomen, which offers so wide a field for surgery in primary lesions, does not bulk largely in reparative surgery. Ventral hernia and artificial anus and their cure, and urethral fistula are the only subjects in this chapter, and the last seems to be hardly correctly described as an abdominal lesion.

Osteo-articular lesions necessarily occupy much space. The treatment of ankylosis, of malunion of fractures, of pseudarthrosis in all its forms and of flail joints receive full notice from a number of authors.

Professor Lambret's article on cinematization of amputation stumps is short, but to the point, and we agree with his conclusions. The suggestions of Vanghetti have been put in practice for at least five years, but we are not yet in a position to estimate their practical value. This, as Professor Lambret says, is largely due to the want of satisfactory prostheses for these cases. The technique of the operations for the provision of plastic motors has been worked out and may be considered established; it is comparatively easy thus to procure adequate and resistant sources of power, but until satisfactory prostheses are available we are compelled to suspend judgement on this subject.

The production of this work, with its wealth of excellent illustrations, redounds to the credit of the publishers and editors who have been so enterprising as to undertake it and carry it through to so satisfactory a result. We have only one complaint to make, and when we call attention to the fact that an alphabetical index is lacking, we do so in the hope that this serious defect will be remedied in the next edition.

ENLARGEMENT OF THE PROSTATE.

To grow old gracefully is the hope of most men, but to grow old healthfully is the expectation of few. It is a source of immense satisfaction that surgery can do so much to make the old age of many men happy. When one reads in the new edition of FREYER'S *Clinical Lectures on Enlargement of the Prostate*[2] the grateful letters and comments of many of the patients to whom prostatectomy has given a new lease of life one feels that much good, after all, is being done, and the unpalatable memories of failures are forgotten. The operation of suprapubic prostatectomy associated with Sir Peter Freyer's name may now be regarded as standardized, to use a commercialism. Certainly in this country no other operation has anything like the same vogue, and the only comments in the past few years have been in the direction of prevention of such complications as haemorrhage and post-operative obstruction, and the advisability of doing a two-stage operation. There is no need to call attention to particular points in these lectures. Suffice it to say that they are written in racy, vigorous style, the details of cases cited are invariably interesting, and the work is founded on 1,600 cases carefully noted and honestly followed out to their conclusion. The book is one which certainly every surgeon ought to know and one which every general practitioner will find helpful.

This edition contains a new chapter on cancer of the prostate, a condition which is apparently more common than was formerly supposed. In Freyer's experience 13.8 per cent. of all his cases were clinically malignant, all but two cancer. He acknowledges that microscopic examination was not made in every case operated on, so that possibly the percentage is higher; indeed, it is so suggested by Albarran and Hallé, who argue that "adenomatous transformation of the prostate in advanced age is in a number of instances the primary stage of a malignant degeneration." We have known of other surgeons who have been surprised to find that a small tough prostate difficult to remove, but regarded as simple pathologically, proved on examination to be cancerous. It would be well worth while submitting every prostate removed by operation to microscopic examination. The diagnosis of cancer of the prostate is by no means certain. If in a patient presenting the usual symptoms of prostatic enlargement one learns that "the symptoms have run their course rapidly in a few months only instead of as many years"; if the rectal examination discovers the prostate to be hard, irregular, immobile, tender to touch; and if catheterization is painful and the instrument meets with sudden resistance in the prostatic urethra, then the conclusion that the prostate is cancerous may safely be drawn. As to operability, experience shows that in some few cases enucleation is practicable and apparently curative, but the surgeon will require to determine the matter for himself with one finger in the rectum and the other in the bladder through the suprapubic wound.

The chapter is a welcome addition to the book, though, being cast in the form of a clinical lecture, admittedly it touches not much more than the fringe of the subject. It is not unreasonable to hope that doctors will make rectal examinations more frequently, and so capture these early cancerous prostates and give both patient and surgeon a chance.

ANATOMY AND MUSCULAR EXERCISES.

THAT a second edition of *Applied Anatomy and Kinesiology*[3] should have been called for within two years of the appearance of the first is evidence of a demand for anatomical knowledge on the part of those who teach the various systems of physical exercises now practised, and also on the part of their pupils. We agree that our knowledge of muscles, particularly of their combination to produce familiar actions, is not well set out in our standard textbooks of anatomy, and that there is great need for a book such as this in which movements of the living body form the theme and the dissected body the dissertation.

In spite of very excellent illustrations and clearly worded explanations, Professor BOWEN'S second edition suffers from the defects of the first: it is based on a superficial knowledge of the physiology of the human body, which, in our opinion, is even more important to an instructor in gymnastics or graduated exercises than a complete mastery of the anatomical details relating to muscles, bones, and joints. To exemplify the reason for making this criticism the reader may be referred to the chapter devoted to the upright posture. There the student is taught that in some respects the human body is not adapted for the upright posture—as shown by the lack of valves in the inferior vena cava and the presence of valves in intercostal veins where they are regarded as unnecessary. The inferior vena cava is part of the great venous cistern from which the heart is filled; even moderate exercise leads to the distension of this cistern; violent and prolonged exercise has been known to cause it to rupture. If valves were provided they would be not only useless, but injurious. The valves in the intercostal veins, as in veins arising in and passing among muscles have nothing to do with the upright or horizontal posture, but are provided to secure the passage of blood towards the heart during intermittent and alternating action of the adjacent muscles. No one can teach or practise exercises intelligently unless the significance of venous valves has first been grasped.

The "location of the vermiform appendix" is also cited as another instance of imperfect adaptation to upright posture in man. "The upright position shifts this structure from the highest level of the digestive tract in the quadruped to the lowest in man, where it is subject to much greater pressure and liable to irritation by fragments of food forced into it by changes in pressure." Such a statement will find no support from what is known of the comparative anatomy or of the physiology of the intestinal tract.

We might have cited statements equally ill founded from the chapters devoted to the spinal musculature, to the action of the muscles of the leg and foot in maintaining the weight of the body in standing and in walking, or in

[2] *Clinical Lectures on Enlargement of the Prostate.* With a description of the author's operation of total enucleation of the organ. By Sir Peter J. Freyer, K.C.B., M.D., M.Ch., LL.D. London: Baillière, Tindall, and Cox. 1920. (Demy 8vo, pp. viii + 174; 56 plates. 10s. 6d. net.)

[3] *Applied Anatomy and Kinesiology: The Mechanism of Muscular Movement.* By Wilbur Pardon Bowen, M.S., Professor of Physical Education, Michigan State Normal College. Second edition. Philadelphia and New York: Lea and Febiger. 1919. (Med. 8vo. pp. 334: 197 figures.)

the chapter devoted to breathing and breathing exercises. The book in many respects is so good that we hope in a future edition the principles of physiology which underlie the practice of "kinesiology" may receive a rendering more in keeping with modern knowledge.

DISEASES OF AVIATORS.

AVIATION demands a high degree of physical fitness and mental balance from those devoting themselves to it, whether in war or peace. Drs. MAUBLANC and RATIÉ, with several years of experience behind them, have written a short and lucid account[4] of the methods they employ in the medical examination of aviators and candidates wishing to take up aviation; they lay stress on the importance of the following points in any such examination. Candidates should be rejected if their past history gives evidence of major or minor epilepsy, tuberculosis, recent malarial infection, or war wounds leaving behind them definite evidences of injuries to nerves, joints, the central nervous system, or the lungs. Similarly, valvular disease of the heart, high arterial blood pressure, or marked functional cardiac disturbances, emphysema, or tuberculosis of the lungs, the presence of extensive pleural adhesions, definite diseases of the abdominal viscera generally, diminution of the visual fields or marked ametropia, deafness, liability to attacks of vertigo, and inadequate response to tests of sensorial acuity or variations of equilibrium, are all adequate causes for the rejection of any candidate. The authors devote forty pages to the description of their various methods of testing the reactivity to sensory impressions (visual, auditory, tactile) and to changes of equilibrium; these methods are applied to candidates who have passed the more medical examination indicated above. The book is clearly written, and should be in the hands of all medical men who have to do with aviators or the selection of candidates for aviation.

The book, *Aviation Disease, its Cause and Remedies*,[5] by Professor CRUCHET and Dr. MOULINIER, deals with a subject studied by these authors since the year 1910. The symptoms of the disease come on chiefly at the higher altitudes of flight and in the course of long flights; they are aggravated by unduly rapid descents. They consist of such things as dyspnoea, palpitations, nausea, deafness, psychical defects of vision, loss of the sense of orientation, headache, lumbago, and increasing slowness of ideation, or somnolence. Naturally, the clinical picture varies in different instances. Discussing the causes of aviation disease, the authors lay great stress on the rise of minimum arterial blood pressure that always is observed in it, but is not observed in the well-trained and fit aviator; other factors, such as fatigue, exposure to cold, intellectual and emotional exhaustion, temporary or permanent disorders of the auditory apparatus, and undue rapidity in descending to earth, are contributory but less important in the development of the disease. In effect, the whole syndrome is brought about by unduly rapid rising to high altitudes, as in mountain sickness, or unduly rapid descent. Discussing the training of aviators with a view to rendering them less liable to the physical and cardiac fatigue that lead to the development of the symptoms described above, the authors emphasize the importance of giving rest to aviators as soon as they develop evidences of such fatigue, whether mental or bodily; it may be added that a good picture of the mental exhaustion typically demanding a change of occupation in an aviator is furnished in some chapters of Mr. J. E. GURDON'S *Over and Above*,[6] a book describing the experiences of an aviator flying in France during the recent war. Professor Cruchet and Dr. Moulinier produce a considerable amount of evidence in favour of the views they advance, and their little book will be read with interest by aviators and the medical men who have charge of them.

[4] *Guide pratique pour l'Examen Médical des Aviateurs des Candidats à l'Aviation et de Pilotes.* Par Drs. Maublanc et Ratié, Médecins du Centre d'Aviation de Chartres. Paris: J. B. Baillière et Fils. 1920. (Imp. 16mo, pp. 109; 25 figures. Fr.3.)

[5] *Le Mal des Aviateurs: Ses Causes et ses Remèdes.* Par Dr. René Cruchet, Professeur agrégé à la Faculté de Médecine, et Dr. René Moulinier, Médecin de la Marine. Paris: J. B. Baillière et Fils. 1920. (Post 8vo, pp. 94; 12 figures. Fr.3.)

[6] *Over and Above.* By John E. Gurdon. London: W. Collins, Sons and Co., Ltd. 1919. (Cr. 8vo, pp. v + 250. 7s. 6d. net.)

MIDWIFERY.

DR. JELLETT'S *Short Practice of Midwifery*[7] is so well known that the appearance of an eighth edition calls for little more than mention. The text has been thoroughly revised and, where necessary, brought into line with the practice taught and carried out at the Rotunda Hospital, Dublin, during the author's term as Master. Many of the illustrations have been redrawn and improved, and Dr. English has added a most interesting statistical table in the form of an appendix, which shows the nature and proportion of all the cases treated in the Rotunda during the masterships of Sir W. J. Smyly, Dr. R. D. Purefoy, Dr. E. H. Tweedy, and Dr. Jellett. As the grand total of cases so reviewed is over fifty-one thousand, it will be realized that few similar tables are available from which more reliable data can be drawn. To teachers this appendix will prove of the greatest value and interest. From every point of view this remains one of the best of the smaller textbooks of midwifery in the language.

An equally well known book in its sphere is Professor JARDINE'S *Practical Textbook of Midwifery for Nurses*,[8] which now makes its appearance in a seventh edition. In substance it remains much as it was in the last edition, and the teaching contained in it has proved so suitable to the needs of so many nurses that not much change could be either expected or desired. The new edition will continue to be the *vade mecum* of many maternity nurses, and they will find in its pages practically all that they require to know either for the practice of their profession or for the examinations of the Central Midwives Boards.

A SYNOPSIS OF MEDICINE.

BOOKS which attempt to condense into a short "compendium" the whole survey of medicine turn out, as a rule, to be cram books for the student, and more often than not, bad cram books. Dr. TIDY, in his *Synopsis of Medicine*,[9] has succeeded in compiling a better compendium than seemed possible to expect. In compact form this volume furnishes an admirable *index medicus*. The author, in his preface, expresses very modest hopes that his book may sometimes prove useful "to those who have to revise rapidly their knowledge of medicine in general or of some disease in particular." Its usefulness will not be so limited. The scope of the work is far wider than in the majority of similar books. To take a single example: "Tuberculosis" is discussed more fully and a good deal more intelligibly than in the average textbook. Modern experiments and modern theories are adequately presented. Or again, in the section on diseases of the nervous system, the anatomy and physiology of the nervous system will be found clearly described and ably linked up with the clinical manifestations of pathological changes. The discussion of carbohydrate metabolism in reference to diabetes is wonderfully clear and comprehensive. Throughout the book "treatment" meets with ample consideration, and this fact alone will enhance its value enormously for the busy practitioner. Dr. Tidy is to be congratulated on having written a good book and given it a good index. The publishers have so contrived, without sacrificing the quality of either the paper or the type, that it will slip into a fair-sized overcoat pocket.

NOTES ON BOOKS.

DR. GABRIEL BIDOU is known as the author of a monograph on instrumental orthopaedics, which was reviewed by us in our issue of August 2nd, 1919, p. 138. In the pamphlet he has recently issued on the action of artificial muscles[10] the same subject is dealt with, and a walking instrument for a case of paralysis of the lower limb is

[7] *A Short Practice of Midwifery.* By Henry Jellett, M.D., F.R.C.P. Ire. Eighth edition, revised. London: J. and A. Churchill. 1921. (Demy 8vo, pp. 564; 236 figures. 18s. net.)

[8] *A Practical Textbook of Midwifery for Nurses.* By Robert Jardine, M.D. Seventh edition, revised and enlarged. London: Henry Kimpton. 1920. (Cr. 8vo, pp. 311; 60 figures. 7s. 6d. net.)

[9] *A Synopsis of Medicine.* By Henry Letheby Tidy, M.A., M.D., B.Ch.Oxon., F.R.C.P.Lond. Bristol: J. Wright and Sons, Ltd. London: Simpkin, Marshall, Hamilton, Kent and Co. Toronto: Macmillan Co. of Canada, Ltd. 1920. (Cr. 8vo, pp. xv+952. 25s.; postage 1s.)

[10] *Des action musculaires artificielles.* Par Dr. G. Bidou. Paris: "La Vie Médicale." 1920. (Fcap. 8vo. 15 pp.: 4 figures. 2 plates.)

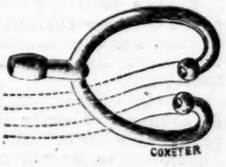
described and illustrated. Reproductions of cinematographic films of the patient walking with and without the appliance are appended, and are of some interest. Dr. Bidou employs spiral springs, generally in groups, as artificial muscles, so adjusted in strength and in leverage as to help or replace paralysed muscles. Another use to which he puts the springs is as antagonists; their action then is that of a spring buffer which comes into play at the end of the movement.

APPLIANCES AND PREPARATIONS.

Improvements for Use with Gas-Oxygen-Ether Outfit.

MR. H. EDMUND G. BOYLE (London, W.) writes: The accompanying illustrations depict some improvements that have been made for use with my gas-oxygen-ether outfit. The first depicts an improved ether or mixture bottle; this comprises a three-way valve, below which is a perforated cup that can be raised or lowered upon the inlet tube inside the bottle. The inlet tube is perforated in two places, the upper being inside the cup and the lower one below the cup. The open end of the tube makes a third aperture. A filling funnel is placed behind the valve. The advantages of this bottle are that the anaesthetist can graduate the amount of ether or mixture better than was possible with the older pattern, for with this bottle the gases can pass in three ways: (1) To the patient direct and without any other; (2) over the surface of the ether or mixture, thus giving quite a small amount; (3) through the ether or mixture when the anaesthesia has to be deepened.

The second illustration depicts a nasal attachment; this comprises a metal stirrup to which are attached a couple of short soft rubber tubes. I have found this very useful for endobuccal and endopharyngeal anaesthesia, and especially for such cases as diathermy of the tongue or palate, or for oesophagostomy and bronchostomy. It is also very useful for some operations upon glands in the neck, enabling the anaesthetist to keep well out of the way of the surgeon. The rubber tubes should be about four inches long.



MEMORIAL TO SIR VICTOR HORSLEY.

A GENERAL COMMITTEE, formed some time ago to take steps to promote a memorial to the late Sir Victor Horsley, has issued the following circular letter:

It has been decided, at a meeting of friends and former colleagues of the late Colonel Sir Victor Horsley, to take steps to commemorate his services to science and the Empire by the foundation of a lectureship or scholarship bearing his name.

The tragic circumstances of his untimely death while on service in Mesopotamia are still fresh in remembrance, and though the absence of so many medical men on war service prevented an earlier movement, we are satisfied that it is not too late for the recognition in a permanent form of Sir Victor's life and work.

He was one of the most noteworthy students of University College Hospital, a very distinguished medallist and graduate of the University of London, and a leader and first Chairman of the Representative Meeting of the British Medical Association. He was a Fellow of the Royal Society and a pioneer in the research work connected with the surgery of the brain and nervous system and the causation of myxoedema; and as secretary of the Commission appointed to inquire into the value of Pasteur's method of treating rabies, his investigations at the Brown Institute were of the utmost value as proving the possibility of stamping out rabies in Great Britain.

Many students have cause to be grateful to him for his painstaking teaching and help in their work; and in addition to his appointments as surgeon to University College and Queen Square Hospitals he had a very large consulting practice.

No record of Sir Victor Horsley's life-work, however brief, would be complete without mention of his unselfish enthusiasm for the social betterment of his fellows. Over and above his great achievements in science and in surgery he will ever be remembered for his devotion to the causes of temperance, the enfranchisement and equal treatment of women, the education and welfare of children, and the removal of the abuses inherent in the slums of our great cities.

Vehemence in pursuit of his political ideals sometimes gave offence, but this can be forgiven and forgotten, and there remains only the memory of a unique character, whose brilliance shed its lustre on his profession and his life-work.

It is suggested that the most appropriate trustees would be the Senate of the University of London, and that if a Lectureship should be finally decided upon, the subject should be left widely open so as to secure the services of men distinguished in some department of public life who might consider it an honour to be the "Victor Horsley Lecturer" for the year.

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the influence of heredity upon good physique, and upon the hygienic effects of other living organisms upon man. It is not necessary that the teachers of these subjects should themselves be medical men; but as teachers in a medical school they should be encouraged to specialize in those branches of their sciences which have a bearing on personal hygiene and public health. There are obvious opportunities for teachers of anatomy and physiology to extend and accentuate those sections of their subjects which have a bearing on health and disease, and it might be possible to arrange special short courses of demonstrations by those junior teachers who are also working in the wards upon the anatomical and physiological relations of morbid conditions."

Concerning personal hygiene the school points out that:

"The main duty of a hospital is to afford medical attendance to persons who recognize that they are ill and apply for treatment of their ailments. Whatever changes may be made in the organization of the medical schools, regard must constantly be paid to the possibility of maintaining and increasing the capacity of the hospitals for carrying out their work." Yet—

"Inasmuch as many of the ailments for which treatment is sought are preventable, an opportunity is afforded, and is usually taken, to impress upon the individual patient the measures he might have personally taken to avoid his illness, and which, if he is ultimately cured or relieved, he should in the future take to prevent its recurrence or aggravation." And the school thinks that—

"It would no doubt increase the regularity with which this procedure is adopted and impress its importance both upon the patient and the students associated in his treatment if the custom of some physicians were more commonly used of handing to the patient, at the time of his discharge, printed instructions as to preventive measures applicable to his condition."

It further urges that:

"A great impetus would be given to preventive medicine of the personal hygiene type if in medical schools a special department for the medical inspection of apparently healthy persons were instituted. In such a department a member of the staff, assisted by senior assistants, would examine all applicants and inquire into their habits and environments, and give advice as to the measures to be taken to maintain a high or even higher standard of health. Such a department for children or adults would follow the line of infant welfare centres now established in connexion with some medical schools.

"The difficulty at the initiation of such a department would be to encourage attendance thereat. The introduction in the near future of the medical inspection of children attending continuation schools would perhaps afford an opportunity for an experiment to be made. The Board of Education might arrange that such medical schools as were willing to co-operate should be constituted as centres for the compulsory inspection of children attending their schools in the surrounding district. The young people who attended compulsorily under the scheme during school age should be encouraged to continue to do so voluntarily at the termination of their school period."

And it adds:

"If these and similar proposals are carried out it is believed that the attention of all those working in the school will gradually be drawn more and more to the importance of prevention, and that all teaching, both practical and theoretical, will be so permeated with the idea of prevention that practitioners trained under these conditions will be little likely to lose sight of its importance, whatever may be their lines of practice after qualification."

The above are only examples of the valuable material contained in the replies from the schools, but they serve to indicate the interest that is taken in the whole subject. As already stated, they seem to leave no doubt that preventive medicine will now occupy a larger place in the mind both of the teacher and of the student than ever it has done before throughout the whole of the medical curriculum.

(To be continued.)

THE scheme for the extension of the Royal Free Hospital is making satisfactory progress. The staff of the London School of Medicine for Women have generously increased their donation to the appeal fund for the extension of the hospital and medical school from £500 to £1,000. The extension of the hospital is to provide beds for that class of workers who live in small flats or lodgings, and are unable to afford the high fees necessarily charged by good nursing homes, but can afford the cost of their maintenance whilst sick (£4 per week). A few beds are now available for men and women at this charge, and twenty-five more beds will be ready early in the New Year. More beds for men, women and children will be provided as soon as funds permit. Donations and subscriptions should be sent to Sir Francis Leyland Barratt, Bt., honorary treasurer, Royal Free Hospital, Gray's Inn Road, W.C.1.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

Doctors and To-day's New Motoring Laws.

So far as they relate to the taxation of motor vehicles the provisions of the Finance Act, 1920, come into force on New Year's Day, as do the provisions of the Road Bill which hurriedly passed the House of Commons and the House of Lords in December. These new conditions, which entirely recast the method by which revenue is levied from the motoring movement, the schemes governing licences, the exhibition of identification marks on vehicles, and so forth, concern medical men in various ways. These may be summarized by a reminder as to the obligations to which the members of the profession owning motor vehicles are liable.

Henceforth medical men are not concerned with rebates on petrol duty, because the tax on motor fuels of all sorts ceases. As far as privately owned passenger vehicles are concerned—and this is the category under which the machines of medical men come—the increased scale of taxation levied by way of licence for the use of such vehicles is the substitute for the fuel scheme. Some doctors own motor bicycles, others three-wheelers, some cycle cars, and some motor cars proper.

Broadly, motor bicycles and three-wheelers not exceeding certain weight limits are taxed by weight—a different scheme from that governing motor cars. But the initial method of procedure is the same in all cases. Hitherto, by the law that lapsed on the last day of December, 1920, it has been possible for a medical practitioner resident in Yorkshire to register a car in London and to buy his annual licence to use it at a post-office in Cornwall, it being necessary merely to take out locally a driving licence at the cost of 5s. a year. The new scheme of taxation does not concern itself with drivers' licences, which have still to be taken out locally. But from New Year's Day onwards the registration and the licensing authorities are centred in the same places. Owners are compelled to register their vehicles either in the districts wherein they reside or where they have most occasion to use their vehicles. Further, the yearly licence for the use of the vehicle has to be taken out locally, just as the driver's licence has always had to be taken out.

The Scale of Charges.

Any private vehicle not exceeding 6 h.p., or which is propelled electrically, involves the payment by the owner of an annual licence fee of £6. For any privately owned motor vehicle exceeding 6 h.p. £1 will be payable for each unit, or portion of a unit, of horse-power according to Treasury rating. That is to say, the ownership and use of a 15.9 h.p. Treasury rating car involves the payment of an annual tax of £16, and so on. Many doctors, however, are still so fortunate as to have in use old cars which are serving them well. Some of these, of course, are constructed on engine principles which are rather hard hit by the adoption of Treasury rating in that the bore measurement is relatively large in comparison with the piston travel. Many such, however, will find a certain measure of relief in the section which reads:

"If any person proves to the satisfaction of the authority charged with levying the duty that he has paid in respect of any vehicle the duty chargeable under this paragraph (Section 6 of the 2nd Schedule of the Finance Act), and that the engine of the vehicle was constructed before the 1st of January, 1913, he shall be entitled to the repayment of 25 per cent. of the duty paid."

This, being interpreted, means that the owner of an old vehicle has a certain measure of relief on the assumption that it will not be giving him as satisfactory service to-day as when he purchased it. Inasmuch as the tendency in the last seven years has been to increase the piston travel in relation to the bore measurement, the continued ownership and use of these older-style vehicles is not penalized, for 25 per cent. rebate is really a fair allowance.

Nature of Licences.

The Ministry of Transport has lately issued an official memorandum setting out the course to be adopted by car owners before New Year's Day. For the purposes of reminder, and for the sake of clearness, however, it will

be well to recapitulate the main heads of this memorandum as it concerns the medical man. Apart from the yearly licences of £1 per horse-power for cars, there will be issued — to be in force for three months from New Year's Day, from March 25th, from July 1st or from October 1st—quarterly licences each at a rate of 30 per cent. of the full annual duties. Quarterly and annual licences alike must be carried in a holder securely attached to the vehicle in a position in accordance with regulations whereby the licence can be seen from the near side of the car. There are two types of licence cards, one circular and the other rectangular. Apparently the choice of type is at the option of the user, the general trend of opinion at the moment being evidently in favour of the circular type, which is neater and more in keeping with the badges of the R.A.C., the A.A., and so on. Each licence is printed on a stout paper card of colour according to the period for which it is to run. Thus the annual licence for this year will be in blue. The first quarterly licence will be yellow. The colours for the second, third, and fourth quarterly licences have not yet been settled. The licence has to be exhibited in a conspicuous position on the near side of the car, being on, or attached to, the wind screen, or on the outside of the fore portion of the vehicle, in line with the driver's seat. It must be contained in a metal holder of weather-proof construction. Types of holders, designed specially to enable the licence to be exposed, have been approved by the Ministry, and are being standardized by the accessories industry.

METHODS OF PROCEDURE.

The first thing the owner of the motor vehicle has to do is to obtain from his local money order office, or from the registration authorities in the area of his domicile—the local postmaster will give the address on request—an application form. Having filled this in, he sends it to the registration authority in his own area, together with a remittance for the requisite amount. This form relates to the registration of his vehicle under the new regulations; it also constitutes the application for the licence, whether yearly or quarterly. Provided the owner takes care to register the letter in which he sends the form his responsibility is practically at an end. If he can prove that a licence, or an application for the same, together with remittance, is in course of post, it is beyond the power of the authorities to make out a case that he has striven to evade the law. Of course, a considerable amount of turning over is being involved at this period by reason of the localizing and co-ordinating of the registration and the licensing authorities, and of the adoption of the principle of local registration. In the case of cars already licensed, and therefore carrying number plates often issued in areas where the car is neither owned nor used, the registration will remain in force when the necessary transfer of particulars has been effected. But all new cars taken into possession from now onwards have to be registered in the district in which the first owner resides, as distinct from the very general practice hitherto, whereby cars have been registered, to the number of thousands, in the district where they have been built. In exchange for the form and remittance the vehicle owner is entitled to receive what is technically styled a continuing document in the form of a registration book, together with a licence card, which has to be placed on the vehicle, as already indicated. By contrast the registration book, which contains the history of the vehicle and is stamped each year—or each quarter, as the case may be—to show at a glance that the fee has been paid, must be kept by the owner in some secure place, but, preferably, not on the car. It may be inspected by the police at any reasonable time. But the owner is not required to carry it with him when motoring on his vehicle, as he is required to carry his driving licence when driving. The registration book is the property of the owner of the vehicle so long as he remains in possession of it. When he sells the vehicle the book passes to the new owner through the one or two—as the case may be—registration authorities concerned. When an owner sells a car he must notify his registration authority and return him the licence and the registration book issued in respect of that car. The local authority will then enter up in the book the date of the transfer of ownership and, on receiving application—direct from the new owner if he is resident in the same neighbourhood, or, alternatively, from the registration authority in the neighbourhood in which the new owner resides, and to whom the new owner will apply—transfer that registration book, either direct to the new owner, or to his registration authority, which, in turn, will issue it to the new owner after having entered up all the details. In short, the registration book is the history of the vehicle. It remains in possession of the owner of the car for the time being. The complete particulars in it are reproduced and kept permanently in the books of the licensing authorities.

TRANSFERS AND SHORT-TERM LICENCES.

By contrast with former procedure, in the motoring laws which have now come into force the licence primarily concerns, not the owner, but the car. Thus, if the writer takes out a yearly licence for his car to-day and sells his vehicle to the reader in July, the reader, as buyer, having completed formalities, enjoys the benefit of that licence till December 31st, 1921. Hitherto the practice has been that if one sold one's car at any period of the year and bought another vehicle not exceeding the same Treasury h.p. rating, there was no occasion to take out a second licence for the use of the car. Now, however, if, having sold his car—therefore having passed the licence on—the writer wishes to buy a new one in the middle of the year, he must pay another horse-power tax in respect of whatever period of the year remains unexpired. For example, if he wishes to use it from an early period in July until the end of the year, then it will pay him best to take out two quarterly licences, each at 30 per cent. of the rate obtaining for the whole year, so that he would get off with the payment of an aggregate of 60 per cent. for six months' use of the car.

In the case of three-wheelers, this licence must be fixed "in a conspicuous position on the near side of the vehicle, and visible at all times by daylight, to an observer standing at the near side of the vehicle—whether the vehicle is moving or stationary."

Forms of application for licences and for the tax are obtainable from any money order office on New Year's Day. It may be pointed out that if the licence is not fixed in the legal position, or if, being so fixed, it is in any way obscured or rendered or allowed to become not easily distinguishable, the person driving the vehicle will be liable on summary conviction to a penalty not exceeding £20 for the first offence, the penalty for subsequent offences being limited to £50. If, however, the person charged proves he has taken all steps reasonably practical to prevent the licence card being obscured, or rendered not easily distinguishable, he will not be liable to be convicted. One does not anticipate that once the new scheme has been running for twelve months its working will be found any more irksome than the old. In fact, it should be rather simpler in face of the provision in the Roads Bill to the effect that in the case of any car to which a registration number has been allotted prior to January 1st, 1921, that number shall be treated as having been assigned to the given car under the new regulations and no new number shall be assigned to such a car. To have proceeded in any other way would have been foolish in face of the fact that, though cars have now to be registered locally, often they will be sold to owners outside the given locality, consequently some cars will always be found about the country carrying number plates other than those of the locality in which their present owners reside and in which they are being used. The new form of taxation does not concern the driving licence, which will have to be taken out, as hitherto, at the price of 5s.

Considering the many minor modifications made week by week, if not day by day, in the details of procedure ordered by the Road Board, when in any doubt on a point it is advisable to inquire at the local money order office or at the local registration office.

THE National Association for the Prevention of Infant Mortality will hold its second English-speaking Congress on Infant Welfare in London on July 5th, 6th, and 7th. The following are among the subjects to be discussed: Residential provision for mothers and babies; inheritance and environment as factors in racial health; the supply of milk, its physiological and economic aspects. Further particulars may be obtained from the Secretary at 4, Tavistock Square, London, W.C.1.

British Medical Journal.

SATURDAY, JANUARY 1ST, 1921.

GALEN.

CHARLES LAMB, in his list of *biblia a-biblia*, assigned a prominent place to "the histories of Flavius Josephus, that learned Jew," and we make no doubt that had Kühn's edition of Galen (a new book when Elia wrote) come his way, it would have fallen under a like condemnation, being certainly a work which "no gentleman's—at least no physician's—library should be without."

Since the days of Elia there has not been any noticeable increase in the demand for Galen's writings. So far as we know, there is but one London medical library from which Kühn's edition (the only modern edition) can be borrowed, and we have never found any great difficulty in securing a volume there. Epidemiologists, and even statisticians, discover that the fame of Sydenham was not unmerited; nobody has yet proved that Galen was an early biometrician with correct views on the periodicity of disease.

At a recent meeting of the Historical Section of the Royal Society of Medicine Dr. Major Greenwood endeavoured to decant the ancient wine into new bottles. Dr. Greenwood, of course, did not wholly avoid the snare which, as he pointed out in a lecture printed in our columns last year, entangles the feet of most students—the risk of finding in ancient writings what one brings to them. Perhaps his attempt to discern in Galen *De Temperamentis* a Bravais-Pearson correlation surface, smacks overmuch of the Puseyite who, according to Macaulay, proved that the *Pilgrim's Progress* was composed in the interest of Tractarianism. Then, again, one need not go very far afield to discover the secret of Galen's medical dictatorship. In doing so Dr. Greenwood for once forgot to take the cobbler's interest in leather. The explanation is, as Dr. Singer remarked, statistical; more than 50 per cent. of surviving Greek medical literature is the work of Galen; it would have been strange had Galen *not* dominated an authority-loving posterity. Yet this is not the whole explanation, and, although Dr. Greenwood disclaimed any attempt to reconstitute the personality of Galen, he did succeed in conveying an impression of it which, whether just or not, was vivid.

Freud himself psycho-analysed Leonardo da Vinci; others who, let us charitably suppose, have at least read the works of Freud, have psycho-analysed Wordsworth, Shelley, and even Homer. Galen may be suggested as an admirable subject. Dr. Greenwood pointed out that in Galen we find interwoven the intellectual and moral characteristics of a Greek of the empire, seen at their best in Lucian, at their worst in *Graeculus esuriens* of Juvenal, with those of the great men of Plato's day. We have abundance of epigram, usually spiteful, sometimes witty, much dialectic, the wisdom of Nigrinus rather than of Socrates. But there is something more; something which we admire in Hippocrates. Galen, for all his hair-splitting realism (in the mediaeval sense), preached a doctrine of unity in disease. His theory of procatarxis, his teaching that in the innate structure and functions of the body and the variations imposed thereon by the atmosphere, by habits of life, by all the phenomena of existence, are to be found the "causes" of disease, is still of value.

Dr. Greenwood pointed out that this philosophy of disease was also embraced by the enthusiasts of the early Victorian epoch. Galen's faith in temperance and moderate exercise, Chadwick's faith in better housing and proper "drains," translate into different dialects the same idea. Galen attached more importance to "seeds of pestilence" and to miasm than did Chadwick; but both agreed in attributing to the totality of conditions a unitary effect. Galen, a nimble-minded Greek, could easily have been taught the bacteriological theory of disease by a traveller on Mr. Wells's time machine. The differentiation of bacteriological strains would have charmed him; he would infallibly have carried it much further than we do. But it would have been altogether impossible to convince him that disease can be conquered by successively or simultaneously immunizing individual citizens against a series of specific "seeds of pestilence." He would have obstinately maintained that to secure a sound body obedience to his principles *de sanitate tuenda* is necessary, and that without such obedience no lasting change in the general level of health can be secured.

Dr. Greenwood argues that Galen had a case, that the epidemiological events of the last few years point to a need for reconsidering our philosophy of disease. We have not to argue that case here, and those who seek from Galen enlightenment in our present difficulties will not perhaps—as Dr. Greenwood for his own part admitted—get so much as they desire. It is, however, a pity that none of the more strictly professional writings of Galen have been translated into modern English. Dr. Brock's edition of Galen on the Natural Faculties (in the Loeb series) gives a good idea of Galen's general physiology. Perhaps one day *De Febrium Differentiis*, *De Sanitate Tuenda*, and *De Temperamentis* will also be made accessible.

We cannot live on the classics; Galen will never more be read by medical students even at Oxford. But it is strange that the writings of one who filled so large a space in medical history should be far less accessible than those of any other extant Greek author of his period.

HOSPITAL PROBLEMS.

THE difficulty of finding adequate hospital accommodation for those in need of it is no new thing; it was realized long before the dawn of modern medicine and surgery. Writing in 1752, Fielding said: "The properest objects (those I mean who are most wretched and friendless) may as well aspire at a place at Court as at a place in the Hospital." The necessitous sick are better off nowadays in that respect, but the hospital problem remains with us, and in some ways is more urgent now than ever before. The war aggravated the trouble while obscuring its signs and symptoms. But towards the close of 1919 there began a great stirring of opinion in regard to civil hospitals, and interest has grown during the past twelve months. The financial plight in which most of our voluntary hospitals find themselves has been brought home to the public; and, side by side with that, new ideas about medical charities and their relation to modern ways of life have been taking root in the minds of the public and of the medical profession. That more hospital accommodation is needed seems beyond question, and most people agree that the voluntary system should be reshaped but not destroyed. The problem is how to adapt the

system to meet present-day needs and notions without breaking the spirit that informs it. Dr. Addison, Minister of Health, has said this many times in the House of Commons and elsewhere; once last year he went so far as to declare that no Minister of Health in his senses would set about to destroy voluntary hospitals. We do not doubt his sincerity, but in these times a minister's good intentions are of small account when his department and himself are under the fierce searchlight of the newspaper press, which, for good or for evil, is a force that has to be reckoned with.

The idea of tackling the hospital problem early was praiseworthy, but in the light of what has since happened it seems clear that an error in parliamentary tactics was made; someone blundered, as we ventured to suggest at the time. On August 16th, 1920, just before the adjournment, Dr. Addison introduced into the House of Commons a medley of legislative proposals in regard to housing and incipient mental disorder and to various matters (including hospital provision) having more or less to do with public health. It was entitled the Ministry of Health (Miscellaneous Provisions) Bill, and Clause 11 sought to extend the powers of county borough councils so that they might supply and maintain hospitals, contribute to voluntary hospitals, and maintain Poor Law hospitals within their area. In the interval between the introduction of the bill in the Commons and its summary rejection in the Lords, on December 14th, 1920, this clause came in for a great deal of adverse criticism. It was interpreted by some as the first step towards imposing bureaucratic control upon the hospitals of the country and towards the destruction of the voluntary hospital system. The bill had rather a rough passage through the House of Commons; a number of clauses were dropped during the Committee stage, and Clause 11 was modified. The apprehensions felt by the medical profession in regard to the hospital clause were placed before the Ministry by a deputation from the British Medical Association on November 1st, 1920. On that occasion the spokesmen of the medical profession took their stand on two main principles: the need for central medical consultation on the main grounds of policy, and the need for local medical consultation in regard to the details of local schemes. The Minister, in his reply, expressed the wish, that there were some body representing the profession generally with which general principles could be discussed during the formative stages of any large hospital policy. He agreed further that local advisory committees might well be set up in connexion with schemes for hospital provision. The composition of a central committee representative of the whole medical profession is not easy to determine, but steps have already been taken by the Association to give effect to the hint. Before the bill met its fate in the Lords it was urged upon Dr. Addison by members of both Houses that every effort ought to be made to sustain the voluntary system, and with this end in view he agreed to appoint an independent committee of five to consider the financial position of the voluntary hospitals throughout the country, and to make recommendations thereon at an early date.

The reference to the committee raises questions of the highest moment to the medical profession, more particularly to those attached to the staffs of voluntary hospitals. On July 1st, 1920, when events were not moving quite so fast in the hospital world, the British Medical Association had the foresight to hold a conference during the Annual Meeting at Cambridge to consider the relation of the honorary staffs of voluntary hospitals to the treatment of State-supported patients. There was a large attendance, and the chairman, Sir Cuthbert Wallace, wisely allowed full latitude for discussion. In the result a resolution was carried with one dissentient, approving the policy of the Hospitals Committee of the British Medical Association in regard to the remuneration of voluntary hospital staffs for work done on behalf of State-aided patients, and directing that the subject should be brought to the notice of the governing bodies of these institutions. On that occasion the general subject of hospital finance was not debated. The outcome of the conference was in direct line with the action already taken by the Association on behalf of memberr of hospital staffs in the case of the treatment of was pensioners.

The Cambridge conference was followed by others throughout Great Britain, and in that way the attention of those most concerned was drawn to this aspect of the hospital problem. The conference held in London on December 21st, 1920, and fully reported in this week's SUPPLEMENT, had a wider field for discussion and marked a further stage in the shaping of hospital policy. The chairman, Sir James Galloway, described it as the first real interchange of hospital staff opinion upon the problem of finance, and the greater part of the day was given up to this topic. The short discussion on the attitude of members of medical staffs of hospitals towards paying patients may be regarded as a sequel to the Cambridge debate. It is significant of how quickly opinion moves in these times that a proposition rejected at Cambridge when put in bald terms should have been accepted in principle six months later in London. On July 1st, 1920, Dr. Astley Clarke of Leicester moved that the time was ripe for the payment of honorary staffs for all services rendered in voluntary institutions, by way of an honorarium on the percentage basis of the expenses of the hospital. This was lost by a large majority, five only voting in its favour; yet on December 21st Dr. Astley Clarke carried a resolution to the effect that should "decisions be taken which would lead to patients paying, in part or in whole, the hospital maintenance fees, either individually or by some contributory method, or with the addition of rate aid or State aid, or by a combination of two or more of these methods, a percentage of all such payments should be passed into a fund which could be allocated in any manner which the honorary medical staff might determine." Despite some objection to the question-begging adjective "honorary," this resolution was adopted unanimously.

On the main subject of hospital finance the conference in London recorded its faith in the voluntary system as a boon to the public, to medical science, and to the medical profession. The opposition, valiantly led by Dr. Peter Macdonald, numbered four in a meeting of one hundred and fifty. A motion that necessitous persons should continue to be treated free was adopted without discussion. It was further agreed that voluntary hospitals ought not to be subsidized by the local rating authorities, save in so far as payment is made for the examination and care of patients for whom such authorities are responsible. On the other hand, the principle was accepted that in times of financial difficulty the central Government should subsidize voluntary hospitals by way of contributions proportional to the income received by the hospital in question from voluntary and other contributions, such subsidies being made through some central fund. The view that employers and insurance companies should do much more in support of the

voluntary hospitals, to which they owe so much, was accepted. In double harness, as it were, with this resolution, another was passed declaring that patients in voluntary hospitals who are not necessitous should contribute during treatment towards the cost of maintenance. This principle, if applied in the absolute form expressed in the resolution, may have consequences more far-reaching than perhaps all members of the conference fully appreciated. In industrial centres, especially in the North of England, where workmen's contributions constitute 50 and even 90 per cent. of the hospital incomes, it is hardly to be expected that the workpeople would agree to make a weekly contribution during health and also to pay for maintenance during illness. As the Chairman of Council of the British Medical Association pointed out, the fund formed by the weekly contributions, which is now paid to hospital governors, would, under the plan suggested, almost certainly be retained by the representatives of the workmen to pay the maintenance charge made by the hospital.

Upon the question of provision for paying patients in voluntary hospitals the conference recorded its opinion that no fixed rate of payment for professional services to such patients should be laid down, the fee remaining (as at present) an arrangement between patient, family physician, and consultant.

The concluding resolution was a vote of confidence in the Hospitals Committee of the British Medical Association as the convener of such conferences, and an acknowledgement that the questions discussed are as yet far from solution. This acceptance by voluntary hospital staffs of the machinery of the British Medical Association marks the consolidation of a policy from which much is to be hoped in this and coming years. The hospital system of the country is now being remoulded, and it is essential that during this process means should exist, through the organized machinery of the profession, for bringing together the best brains in it for the discussion of the many important problems arising.

CENTENARY OF THE ACADÉMIE DE MÉDECINE.

THE celebration of the centenary of the Academy of Medicine of Paris was formally begun by a solemn ceremony on Monday, December 20th, at 3.30 p.m.; M. Millerand, the President of the French Republic, was in the chair. The President of the Academy, M. Laveran, first read an address; then the new perpetual secretary of the Academy, Professor Achard (who has just succeeded in this office the late Professor Debove), called on delegates to present their addresses. Owing to the large number of delegates (113), of whom Switzerland sent 25, Great Britain 16, Belgium 11, Holland 6, Italy 6, Venezuela 6, the United States of America 5, Denmark 4, Chile 4, and Greece 3, one representative only of each country was called upon to present his address, though England, Scotland, and Ireland were counted as separate countries for this purpose. The Central Empires, it is hardly necessary to mention, were not represented among the delegates. In reply Professor Achard delivered a short but eloquent message of welcome, and, after the Minister of Public Instruction, M. Honnorat, had given an address, M. Millerand dissolved the meeting. On Tuesday morning, December 21st, Professor Vaillard reviewed the part played in the last 100 years by the Academy of Medicine in the evolution of public health, and was followed by M. Hanriot, who commemorated the benefactors of the Academy. In the afternoon Professor Chauffard summarized the work done in medicine by the Academy, dwelling much on Villemin's researches on tuberculosis and Pasteur's epoch-making investigations in connexion with microbic diseases. At 5.30 p.m. the delegates were received by the Mayor of Paris at a reception given by the municipality at the Hôtel de Ville. On Wednesday morning M. Camus described the influence of the Academy on vaccination, and M. Meillère discharged the same duty with regard to hydrology. In the afternoon the past President, Professor Delorme, gave an exhaustive historical review of surgery in relation to the Academy during the century 1820–1920. The celebrations closed in the evening with a banquet at the Hôtel Palais d'Orsay, with M. Laveran, President of the Academy, in the chair. The cordial hospitality given to the delegates was emphasized by the gift of a beautiful memorial medal, designed by M. Paul Richer.

SILICOSIS AND TUBERCULOSIS AMONG MINERS.

IN his annual report for the twelve months ending July 31st, 1919, Dr. W. Watkins-Pitchford, chairman of the Miners' Phthisis Medical Bureau, reports over 32,000 statutory clinical examinations and investigations; in addition the board made 1,400 examinations for military service, and for five weeks they gave their whole time to attendance on patients suffering from influenza during the epidemic. The prevalence of pulmonary tuberculosis, whether "pure" or complicated by silicosis, as revealed at the periodical examinations of 15,000 miners of European descent, was at the rate of 1,141 per 100,000, as compared with 1,267 and 909 for the two preceding years respectively. The prevalence rate of silicosis, whether in its pure form or complicated by tuberculosis, was 5,532 per 100,000, as compared with 5,602 and 5,595 for the two previous years. As ascertained at the periodical examinations, the attack rate of tuberculosis not complicated by silicosis was 255 per 100,000, as compared with 259 for the preceding year. In one case only was pulmonary tuberculosis detected at periodical examination of a person who had passed the "initial" examination of the bureau. The apparent production rate of cases of non-complicated silicosis detected at periodical examinations was 2,480 per 100,000, a figure more than double that of the previous year; it is pointed out, however, that a considerable number of these miners had lately returned from active service, and not all had developed their condition during the year under review. The prevalence rate of tuberculosis in combination with silicosis, as detected at periodical examination, was 869 per 100,000—almost the same as in the previous year. The statistics given refer to persons of European descent; among 172,000 native labourers, of whom 129,000 were employed underground, tuberculosis without silicosis was found in 789 instances, giving the low prevalence rate of 458 per 100,000, while tuberculosis in combination with silicosis was encountered in 378, or 219 per 100,000. It is the unanimous opinion of the bureau that in assisting the formation of a just decision as to the presence or absence of silicosis, and also for the diagnosis of all but the very earliest cases of tuberculosis, it is of paramount importance that a technically satisfactory radiogram should be available. During the twelve months 172 miners were admitted to the wards for observation extending from two to five days. During the 15,000 periodical examinations of working miners of European descent the opinion was formed in 165 cases that the person's health was likely to be endangered by a continuance in underground work; of these, 135 were judged to be in danger of developing tuberculosis, including 102 who were already silicotic; 24 were cases of heart weakness, 2 of chronic malaria, and one each of chronic bronchitis, empyema, cancer, and epilepsy. In view of the observation that tuberculosis affecting the silicotic miner is relatively non-communicable to healthy persons, preliminary experiments were made with the object of detecting a possible diminution in the virulence of the *Bacillus tuberculosis* after it has been propagated in silicotic lung tissues. In guinea-pigs, however, whether the bacilli had been derived from silicotic cases or from the subjects of ordinary

pulmonary tuberculosis, it was found that the animals injected developed tuberculosis with equal rapidity and with the same characteristic distribution.

FLAVOURING AGENTS IN MEDICINES.

THE Insurance Committee for the County of Stirling has proposed to take action in connexion with the routine use of flavouring and sweetening agents in doctors' prescriptions. At a meeting of the Committee on December 16th a letter was read from the Scottish Board of Health in which it was stated that while on the one hand the Board could not refute the argument that medicine made pleasant was more likely to be taken regularly, yet on the other it suggested that the use of flavouring and sweetening agents would tend to foster the drug habit. The Board believed that the average insured person goes to his doctor in order to get well as quickly as possible, and is therefore prepared, as an intelligent person, to obey instructions as to treatment. Though it believed that only a very small minority of patients needed to have medicine made palatable the Board did not suggest that it was possible to discontinue the use of flavouring and sweetening agents entirely; it, however, desired that the considerations set out should be placed before the Panel Committee, together with a reference to the memorandum on the rate of medical remuneration under National Insurance by Sir Clifford Allbutt, President of the British Medical Association, which was submitted early in 1920 to the Arbitration Board. The particular passage quoted from the President's memorandum (which was printed in full in the SUPPLEMENT of February 28th, 1920, p. 46) was as follows: "And, last, not least, the doctor requires to have time for the customs of private practice, namely, instead of curt and dictatorial visits, patient and explanatory conversations, such as to lift the patient out of the pill, plaster, and bottle superstition, and up to a rational conception of the nature of the disease, its prognosis, and the means of its prevention." The Insurance Committee expressed itself satisfied that the Stirlingshire doctors were endeavouring to keep the cost of prescriptions down to the lowest possible figure. But there is something droll in this solemn discussion of the ancient question whether medicines should be nice or nasty. There are some, even among the medical profession, who think that the nastier the medicine the more effective it sometimes is. The President's dictum does not, in fact, deal with the point; Sir Clifford Allbutt was urging an appeal to the patient's reason, for his help in the prevention and treatment of disease. He was not at all concerned to recommend that the pill or potion, when it had to be prescribed, should be nasty.

DIPHTHERIA CARRIERS.

GUTHRIE, GELIEN, and MOSS have undertaken an exhaustive investigation of the diphtheria-carrier problem, and now supplement their observations published in 1912 by results of far-reaching importance as regards the practical significance of the carrier state and the question of how, from the point of view of the community, diphtheria carriers should be dealt with.[1] In February, 1912, a single throat-swab from each of 800 children attending one of the public schools in Baltimore revealed diphtheria bacilli in 85 children, or 10.6 per cent.; a re-examination of the same 800 children three months later gave positive cultures in 69, or 8.6 per cent.; and the number of children yielding positive cultures at either one or the other examination was 144, or 18 per cent. Virulence tests, as shown by injection of cultures into guinea-pigs, a positive result being reported when death occurred with characteristic lesions within four days, were carried out with diphtheria bacilli from 99 cases and 9 were found to show virulent bacilli. From further swabbing of some of these 800 children 15 more carriers were discovered, bringing the total up to 160. Only 11 of these 160 carriers gave a history of having had diphtheria, and none within the previous three years; while under observation none of them subsequently developed diphtheria. Fourteen of the carriers gave a history of exposure to diphtheria at periods varying from one to twelve years previously. Careful inquiry failed to find any example of the disease arising among the contacts of the 160 carriers. In order to determine how long diphtheria bacilli persist in the throats of persons with positive cultures, but without clinical evidence of the disease, 50 of the carriers mentioned above were examined at intervals of two weeks for three months; at the end of this period six only were positive. With the object of throwing light on the question whether or not diphtheria bacilli in the throat can undergo a change in virulence—that is to say, whether virulent bacilli can become non-virulent or non-virulent bacilli become virulent—a remarkable experiment was performed on five healthy persons proved to be free from diphtheria bacilli by daily cultures over a period of two weeks; their throats were then inoculated with a pure culture of non-virulent bacilli, and after that daily swabs were examined for some weeks, then swabs were taken at intervals of a few days for three months, and subsequently at longer intervals for about fifteen months; some of these five individuals became carriers, but none ever showed virulent bacilli or suffered from symptoms referable to the diphtheria bacilli in their throats. A series of observations on the cultural and staining reactions showed that virulent and non-virulent diphtheria bacilli are exactly alike, and can be distinguished only by the toxin-producing power possessed by the virulent bacilli, as shown by the guinea-pig test. The other members of the diphtheria group are readily differentiated from the diphtheria bacilli, and are without any pathogenic significance. The important conclusions from these observations may now be briefly summarized: the diphtheria bacilli in a majority of healthy (that is, not "convalescent" or "contact") carriers are non-virulent; non-virulent bacilli cannot cause diphtheria; there is no proof that non-virulent bacilli can become virulent; and therefore carriers of non-virulent bacilli are not a menace to others or to the community at large, and interference with their liberty is unwarranted. It may be advisable to isolate carriers until the question of virulence of their bacilli has been decided, but, if the culture proves non-virulent, further detention of the carrier is unjustifiable. No doubt time and expense are entailed by the guinea-pig test, and a simpler and less expensive one is urgently needed; but this drawback is less serious than the economic loss and inconvenience incurred by needless isolation of the carrier of non-virulent bacilli. On the other hand, the carrier of virulent bacilli occupies an entirely different position.

[1] C. G. Guthrie, J. Gelien, and W. L. Moss: *Bull. Johns Hopkins Hosp.*, Baltimore, 1920, xxxi, 388-403.

THE CAMPAIGN AGAINST VENEREAL DISEASE.

THE commission, consisting of Dr. Rupert Hallam, Mrs. C. Neville Rolfe, and Miss E. O. Grant, which has been sent out by the National Council for Combating Venereal Diseases, with the authority of the Colonial Office, to study the social conditions and the steps to be taken locally to combat venereal disease in the East, has had a warm welcome during its journey across Canada. The Canadian Council for Combating Venereal Disease and the public health authorities took the opportunity which the presence of the commission afforded to conduct a vigorous campaign of instruction, and to enlist public support throughout the Dominion; the assistance given by the press greatly added to the success of these meetings. A large meeting was held at Toronto on November 8th under the chairmanship of the Hon. Mr. Justice Riddell, and a resolution was passed urging that the Ontario Council should be reorganized on the lines of the National Council in Great Britain, so that closer co-operation might be obtained between the Government

and provincial and municipal authorities. Before the commission left for Hong Kong and other eastern ports it was able to convene a meeting at Victoria of representatives of practically every organization in British Columbia, and a committee was formed to assist the Canadian Council in attacking venereal diseases as a general health problem.

EPIDEMIC HICCOUGH.

DURING the last few weeks the Paris correspondents of the daily newspapers have mentioned on several occasions the prevalence of hiccough there and have noted that the disorder has incapacitated several public men. An account of the symptoms of what has come to be called epidemic hiccough was given by MM. J. A. Sicard and J. Paraf to a meeting of the Société Médicale des Hôpitaux de Paris on December 3rd, 1920, and at a subsequent meeting it was reported that forty cases had been noted during eight days among 3,000 male factory hands at Lille. The malady appears to show a particular affinity for the male sex; of Sicard and Paraf's twenty-seven cases, one only was a female. Although occasionally preceded by a slight degree of muscular stiffness, brachial or cervical neuralgia, epigastric discomfort, or febrile malaise, the attack as a rule appears quite suddenly in persons who are otherwise in good health. Usually its duration is two or three days and the temperature is little raised, if at all, but Netter had one patient whose temperature exceeded 102°; in this case the illness lasted six days. The hiccough occurs in rhythmic crises lasting from half an hour to an hour and a half, and separated during the daytime by intervals of similar duration. During the attack the spasms occur at the rate of six to eight a minute; the crises are not usually frequent during the night, and there is little insomnia. No cases of relapse or recurrence, or of any complication, were noticed. In two cases the cerebrospinal fluid was found to be normal. With regard to treatment, analgesics, including morphine, were often ineffective, but in certain cases the spasms could be inhibited by compression of the eyeball, rhythmic traction on the tongue, or the application of an icebag to the side of the neck. The physicians of Paris appear to have little hesitation in connecting this curious epidemic with that of encephalitis and its myoclonic manifestations. Fortunately, in the cases reported up to December 3rd, hiccough was the sole serious manifestation, and the course of the malady was entirely benign; in view, however, of the polymorphism of epidemic encephalitis, and of its widely different modes of onset, it is right to maintain a certain reserve with regard to the prognosis of epidemics such as the one recorded in Paris. Possibly Sicard and Paraf are right in their conjecture that cases formerly described as hysterical or neuropathic hiccough, and also certain epidemics of chorea major recorded during the Middle Ages, may have been connected with a coincident or antecedent epidemicity of encephalitis.

PRIZE IN OPHTHALMOLOGY.

MR. W. EDMONDS and Miss S. Edmonds, of Wiscombe Park, Colyton, have founded a prize in ophthalmology in memory of their brother, Nicholas Gifford Edmonds, Lieutenant 2nd Black Watch, who fell at Magersfontein on December 11th, 1899. The prize, of the value of £100, will be awarded every two years for the best essay on a subject dealing with ophthalmology and involving original work. The competition is open to all British subjects holding a medical qualification. Subject to certain legal conditions, the management of the prize will be in the hands of a committee nominated biennially by the Medical Board of the Royal London Ophthalmic Hospital, which will select the subject of the essay and elect two examiners. The winner of the prize will have the option of giving a lecture on the subject at the Royal London Ophthalmic Hospital. The Middlemore Prize of the British Medical Association, awarded triennially on very similar lines, has rendered valuable service to ophthalmology, and many of the Middlemore Prize essays remain standard works. It may certainly be expected that the generous gift now made will also serve as a strong stimulus to original work. There cannot be too many such incentives to break away from routine in professional life, and to stimulate initiative; many men have originality and power of investigation, but from lack of stimulus do not settle down to any definite line of research; the setting of a concrete subject is often all that is required to fire a man to carry out a valuable piece of work. As the subject of the essay will be announced two years before the award, ample time will be afforded for studying the literature, for thorough observation, and for carrying out experiments before sitting down to the actual composition of the essay. By their generous liberality Mr. and Miss Edmonds place the profession under a deep debt; their wish in founding the prize is that suffering may be alleviated, and it may be confidently anticipated that this end will be attained.

THE WAR EMERGENCY FUND.

WE are informed that the Executive Committee of the War Emergency Fund, at its meeting on December 21st, made several substantial grants to defray, in whole or in part, the school fees of the sons of medical men who left their practices to take up commissions in H.M. Navy or Army during the late war, and who, after resuming civil practice, find themselves in temporary financial difficulty owing to their war service. The Committee is prepared to make similar educational grants for the daughters of such medical men. Applications for such grants should be made to the Honorary Secretary, War Emergency Fund, 11, Chandos Street, Cavendish Square, London, W.1.

A BILINGUAL Congress in Radiology will be held in London in the middle of April next. The Congress will last three days, and on each day there will be papers and discussions in each of the three subjects—radiology, electrology, and physiotherapy.

Medical Notes in Parliament.

The Parliamentary Session.

VARIOUS reasons may be assigned why Parliament, in the session just ended, has not fulfilled the high hope of the King's Speech of last February. Perhaps the simplest and broadest explanation may be provided by the psychologist, who would say that the fault lay not particularly in men or measures or circumstances, but in all three—that is, in the inevitable difficulty of quickly reforming habits of mind and procedure which had been set up for the war and temporarily hardened.

This explanation applies to the somewhat jerky way in which Cabinet Ministers in their utterances have dealt with both foreign and domestic policy, authoritatively and unauthoritatively, just as during the war they acted sometimes collectively and sometimes on their own initiative to meet the emergency. It accounts also for the defective working of members of Parliament, who, under the system developed for the war, have had to distribute themselves on various Grand Committees upstairs, like irregular bodies of quicksilver, and have thus been tempted to neglect the House itself. Their attendance in that place has often been poor, and discussions have been left to a few members both for speech and for hearing; so it has happened that the House itself has lost much of its former authority and distinction. As for the measures put forward by the Government, they have evoked the criticism which architects make of transition periods; they have lacked character and strength in gathering up purposes and plans left over from the war, and they have not been fully designed for the new circumstances of peace. What was needed in the change over was leisured and deliberate thought. Instead, the war habit of mind and the pressure of circumstances have led to an attempt to do too much in the time. Thus, there have been diffused activities and a certain waste of energy

and want of clearness of expression. It must be recognized that this was almost inevitable; but none the less it is desirable that the causes for the very partial success of the session should be frankly faced, so that they may be corrected as soon as conditions permit.

While these reflections cannot be avoided, it is due to the Government to remember that several measures of great importance have been enacted, and that brave attempts have been made to carry through others. In addition, a number of smaller matters have been usefully dealt with in minor bills, and the whole scheme of administration has been in process of gradual revision. Perhaps the Coal Mines Act, although its passage is now almost forgotten, will rank first in value in history owing to the understanding reached between owners, miners, and the State. What will emerge out of the Home Rule Act nobody professes to be able to say; but a bill which is designed to enable the setting up of two parliaments and to rearrange all sorts of relations between Ireland and Great Britain necessarily requires a great deal of care—none the less because the Opposition, disagreeing with the proposal, declined to have anything to do with it. The Agricultural Act involved other delicate matters of settlement between the various interests engaged in the cultivation of the land, and the controversy excited in both Houses sufficiently showed the difficulty of the problem. The Unemployment Insurance Act has proved even a more timely measure than was foreseen by most people while it was being put through. The Extension of Health Insurance Act, the Dyes Act, and the Act to give power to the Transport Minister, all dealt with subjects which at other times would have had a larger place in public attention. Two small bills which certainly deserve mention are that for establishing juvenile courts and the financial provision made to enable pensions for the blind to begin at the age of 50.

A considerable part of the time of the session was, of course, occupied with finance. Mr. Chamberlain has been generally condemned in business circles for maintaining and increasing the Excess Profits Duty, but although the most gloomy observations are made concerning the possible yield, as well as in reference to its effect on trade, the Chancellor of the Exchequer has continued to assert his confidence that one way or another his Budget of next year will give the estimated surplus. It remains to be seen who will prove to be right.

There is no doubt that the lack of co-ordination of Government business, to which reference in these notes has already been made, has had much to do with the misfortunes of Dr. Addison in his ambitious efforts to make the Ministry of Health thoroughly worthy of its purpose. The plain man in the street has been puzzled to know why housing and health, two of the biggest and most urgent administrative affairs, have fallen to the responsibility of a single Government department; but that is due rather to history than intention, and Dr. Addison, until he was recently relieved to some extent by Dr. Macnamara, who has taken up the labour problem in regard to building, has had to bear the full brunt of both affairs. Again, it is an open secret that in respect of the division of time for legislation Dr. Addison was handicapped by other Cabinet arrangements, and that is the reason why he made the error of producing an omnibus health bill, which united opposition without attracting sympathy. The position of that measure has been sufficiently dealt with in these notes, and it need only be said that the appointment of the committee to go into the whole question of hospital finance may be expected at any moment. One of the greatest regrets that must be felt by all interested in health legislation is that the Proprietary Medicines Bill, after having been given slow and considered passage to the Report stage in the House of Lords, failed to get time for progress in the Commons. The hope is that the work that has been done in this connexion will not be lost, but everyone knows that in the Commons this measure of reform will have to meet a good deal of criticism, due to the opposition of various interests.

No review of the session, however brief, can close without a reference to the dark shadow of unemployment. Mr. Lloyd George, in his speech on this subject just before the prorogation, was frank in saying that the measures which were being taken to relieve it could only be in the nature of palliatives. Recovery must depend largely on the restoration of peace conditions in the world and on the awakening of the people of this country to the fact that our trade can be recovered, even in those circumstances, only by increased industrial activity and by a more economic production. The wage does not matter; what does matter is the value given for it; and at the present time this, in many cases, is exceedingly unsatisfactory, and threatens to leave us behind in the world competition.

The Dentists Bill.

We summarize here the principal provisions of the Dentists Bill now before Parliament. The bill is concerned only with regulations to prevent unqualified practice; no extensions of treatment are contemplated.

Section I, which is to come into operation from one to two years after the commencement of the Act, provides that no person who is not a dentist registered under the Dentists Act of 1878 may "practise or hold himself out, whether directly or by implication, as practising, or as being prepared to practise, dentistry for fee or reward"; excluded from the application of this section are (1) dental practice by a qualified medical man; (2) extractions performed by a registered pharmaceutical chemist or registered chemist and druggist (provided that no local or general anaesthetic is used, that the case is urgent, and that no qualified medical practitioner or registered dentist is available); (3) minor dental work performed (in approved conditions and with the supervision of a registered dentist) in public dental services. Section II authorizes the establishment of a Dental Board with perpetual succession and a common seal; the first Board is to be composed of a chairman appointed by the Privy Council, three lay members appointed by the health authorities of England, Scotland, and Ireland respectively; three persons appointed by the General Council; and five persons who are, or have been, engaged in the practice of dentistry. Of the last-named group one must be a person who before the passing of this Act was not registered.

Section III establishes the right of admission to the *Dentists' Register* of certain persons (of good character, and having attained the age of 23) who are not at present qualified. These include (1) persons who for five years before the commencement of the Act engaged as their principal means of livelihood in the practice of dentistry in the British Isles, or who not less than one year before the commencement of the Act were admitted to the membership of the Incorporated Dental Society; (2) persons having for five years been principally occupied as dental mechanics, provided that within two years they pass the prescribed examination in dental mechanics, and within ten years thereafter they pass (after the prescribed training) the prescribed examination in dentistry; (3) any person who within two years passes the prescribed examination in dentistry and whose principal means of livelihood at the commencement of the Act was the practice of dentistry, will be entitled to admission to the *Register;* (4) the same is true of a duly registered chemist who was in "substantial practice" as a dentist, and whose practice included "all usual dental operations," provided that he gives an undertaking that within five years from the date of his registration he will cease to carry on concurrently the occupations of chemist and dentist. In the case of ex-service men the Board may dispense with any of the requirements of this section if the public interest is not thereby prejudiced. Section IV lays down that a body corporate may carry on the business of dentistry if it carries on no other business, and if all the directors, managers, and operating staff thereof are registered dentists. A person who for five years has acted as director or manager of a body corporate engaged in dentistry is entitled, however, to be entered in a list kept by the Registrar especially for the purpose of this section—such a person shall be entitled to act as director or manager, but shall not by virtue of this registration be entitled to practise dentistry. Every body corporate carrying on the business of dentistry is required to transmit annually to the Registrar of the Board full descriptions of the directors, managers, and operators. Sections V to X define the powers and duties of a dental board, and authorize the transference thereto of certain powers and duties of the General Council under the Dentists Act of 1878 and the Medical Act of 1886; erasions from the *Register* are to be made by the General Council acting after consideration of the report of the Dental Board.

Medicines for Panel Patients.—Mr. Casey asked, on December 23rd, 1920, whether the Minister of Health was aware that Dr. Ritchie and Dr. Allott, of Hovland Common, near Barnsley, had been informed by the Wakefield Insurance Committee that they were supplying or prescribing a quality of medicine to panel patients which was far too expensive; that Dr. Allott had been surcharged £15 for this alleged offence; that in consequence of the restrictions imposed, the doctors had notified persons on their panel that in future they would be unable to supply or prescribe the quality of medicine which, in their opinion, was necessary to many cases under their care; and what action he proposed to take to ensure that medical men were able properly to discharge their duties to panel patients by being permitted to prescribe and supply that which was essential to a speedy recovery irrespective of the cost of the drugs used. Dr. Addison replied that his attention had not been previously called to this case, and he was causing inquiry to be made. He could inform Mr. Casey, however, that medical benefit under the Insurance Acts included the provision of "proper and sufficient medicines," and no doctor could be surcharged in respect to prescribing unless the character or quantity of the drugs was "in excess of what may reasonably be necessary for the adequate treatment of his insured patients," and then only on the report of the Panel Committee consisting of doctors elected by the insurance practitioners of the area. Any local decision to surcharge a doctor was subject to appeal to the Ministry of Health.

England and Wales.

THE PEOPLE'S LEAGUE OF HEALTH.

As a result of a meeting held by the People's League of Health at the Cardiff City Hall on December 15th, under the chairmanship of the Lord Mayor, at which Sir Bruce Bruce-Porter, Dr. Eric Pritchard, Dr. Mary Scharlieb, and Dr. E. H. Stancomb, representing its medical council, were the speakers, a committee was formed to establish the work of the League in Wales. Among those organizing the Welsh Branch are: Dr. Edgar Collis, Talbot Professor of Preventive Medicine, Welsh National Medical School; Dr. Ewen J. Maclean, Chairman of the Cardiff Insurance Committee; and Mr. D. W. Evans, Director-General of King Edward VII Welsh National Memorial Association. The committee, in expressing its very high appreciation of the aims and objects of the League, considers the present moment singularly opportune for the furtherance of the campaign undertaken by the League, particularly in the direction of developing a public demand for health legislation.

MEDICAL TREATMENT OF LONDON SCHOOL CHILDREN.

The London County Council, on December 21st, agreed that for the year from April, 1921, to March, 1922, the allowances to hospital committees and school treatment centres in respect of the services of surgeons, doctors, and anaesthetists employed in the medical and dental treatment of school children under the Council's scheme, should be at the rate of £80 a year (instead of £70) for one half-day of two and a half hours' duration a week, and that the dentists' allowances be £65 a year (instead of £50 to £55) for the same time. The allowance to nursing associations in connexion with the treatment of minor ailments is to be at the rate of £175 a year (instead of £150) for the equivalent of the service of each full-time nurse, including her travelling expenses and the drugs and bandages and other necessaries used in treatment. Six additional minor ailment centres and six additional half-time dental centres are to be set up. In the event of the necessity of calling in a local medical practitioner to see children at their homes as a result of treatment performed at the school treatment centres, the committees of the centres are to be responsible for the payment of doctors' fees, such fees to be reimbursed to the committees by the Council. The arrangements sanctioned for 1921–22 provide for the treatment of 32,620 cases of eye defects (as against 31,645 for the present year), 18,110 ear, nose and throat cases (against 15,845, the increase being due to the fact that some hospitals have refused to allow school children to attend their aural departments), 53,350 cases of minor ailments, 118,140 dental cases, and 2,628 ringworm cases, each representing some 10 to 15 per cent. increase upon the figures for the present year. The cost of all these arrangements is estimated at £90,715, an increase of £19,000 upon the cost for the present year, and of this increase £8,360 represents increased salaries of medical practitioners and dentists. The proposed payment compared with pre-war rates shows an increase of 60 per cent. in the salaries of doctors, and 50 to 60 per cent. in those of dentists.

Scotland.

HIGHLANDS AND ISLANDS MEDICAL SERVICES.

THE following letter has been issued by the Scottish Board of Health to practitioners serving under the Highlands and Islands scheme:

"I am directed by the Board to refer to their Circular Letter of July 13th last and to inform you that, in view of the representation made to the Board by the Highlands and Islands Subcommittee of the British Medical Association, and after negotiation with the Treasury, it has been decided that the revised scale of fees set out in the letter referred to above should come into effect on January 1st, 1921.

"The following is the detailed statement of the fees that may be charged on and after the 1st proximo to the classes of patients defined in Article 3 of your Agreement with the Board:

"(*a*) In ordinary cases the fee shall not exceed 5s. for the first visit, and 3s. 6d. for each subsequent visit in the same illness.

"(*b*) In midwifery cases the maximum fee chargeable shall be £2 2s., including any subsequent visits that may be necessary; and

"(*c*) Fees as specified below may be charged for certain special services—namely:

Service.	Fee not to exceed— £ s. d.
1. Operation requiring general anaesthetic ...	2 2 0
2. Fee to anaesthetist	1 1 0
3. Operation requiring a local anaesthetic ...	1 1 0
4. Abortion or miscarriage ... ... (or £1 1s., according as general anaesthetic is or is not required)	2 2 0
5. Setting of fracture	1 1 0
6. Reduction of dislocation	1 1 0

"In all cases under head (*c*), except (2), the fee is intended to cover two subsequent visits."

Ireland.

ULSTER MEDICAL SOCIETY.

THE second meeting of the session was held in the Medical Institute on November 18th, with the President, Dr. Thomas Houston, in the chair. Mr. Crymble read a paper on obstructions of the alimentary tract. The paper was illustrated by *x*-ray slides, from a selection of his own cases, thrown on the screen, and dealt chiefly with the more disputed aspects of abdominal affections, such as ileal stasis and mobile caecum.

The third meeting was held on December 2nd. Dr. W. J. Wilson, professor of hygiene and public health, Queen's University, Belfast, opened a discussion on present-day problems in public health; he dealt with the Ministry of Health Act, 1919, the interim report of the English Consultative Council on medical and allied services, and finally urged the Ulster practitioners, in view of the near approach of an Ulster parliament, to organize and see to it that any scheme for the prevention and treatment of disease should have their *imprimatur*. Dr. Williamson, chairman of the Public Health Committee, Professor R. J. Johnstone, Dr. H. W. Baillie, superintendent medical officer of health for Belfast, Dr. W. Burns, and Dr. Gardner Robb joined in the discussion. Mr. A. B. Mitchell moved, and Dr. Trimble, principal tuberculosis officer for Belfast, seconded, that medical inspection of children should be adopted. Dr. McKisack proposed, and Mr. A. Fullerton seconded, that a public health committee of the society be formed. Both these resolutions were passed unanimously.

The fourth meeting of the session was held on December 16th. Major J. A. Sinton, V.C., M.D., I.M.S., was elected an honorary fellow. Dr. St. George, Lisburn, read notes of an unusual case of arsenical poisoning. Mr. T. S. Kirk read notes on two rare tumours of the small intestine, and demonstrated sections of voluntary muscle showing the changes produced by contusion. A public health committee of seventeen members was elected.

Honour to Major J. A. Sinton, V.C.

The president of the society (Dr. Thomas Houston) and Miss Houston were at home to the fellows and members and their wives on December 18th, 1920, at the Medical Institute, Belfast. The event of the evening was the presentation of the certificate of honorary fellowship of the society to Major J. A. Sinton, V.C. The certificate is in the form of a triptych bound in Russian leather, ornamented by charming water colours of the Queen's University, the Royal Victoria Hospital, the Medical Institute, with reproductions of the Victoria Cross and the Russian Order of St. George, and the crests of the Indian Medical Service and of the Ulster Medical Society. It reads as follows:

"This is to certify that Brevet-Major John Alexander Sinton, V.C., M.D., D.P.H., Indian Medical Service, has been elected an Honorary Fellow of the Ulster Medical Society in appreciation of the conspicuous gallantry and devotion to duty which have earned for him the greatest distinction which a British soldier can obtain—the Victoria Cross for valour."

In presenting the certificate, Dr. Houston spoke of the graceful act of recognition of a doctor's courage by Sir William Whitla, who, when he built the Belfast Medical Institute, installed a beautiful window in memory of Dr. Smyth of Burtonport, co. Donegal, who lost his life during the typhus epidemic at Arranmore. He then referred to the specific act which gained Captain Sinton the V.C. at

Orah ruins in Mesopotamia in January, 1916. Major Sinton, in reply, thanked the Society for the honour bestowed on him, and spoke in glowing terms of the good work done by the civilian doctors temporarily in the army during the war.

Correspondence.

HOSPITAL STAFFS AND PAYING PATIENTS.

SIR,—Having been present at the conference of representatives of hospital staffs on December 21st, 1920, but unable, in spite of two attempts, to catch the eye of the chairman, I venture here to put forward that criticism of the Leicester motion which I was unable to utter in the hall. That motion seemed to me to spoil an otherwise excellent meeting. Voluntary payment by a patient of a fraction of the cost of his bare maintenance might, indeed, furnish argument for raising the salaries of those officers who are concerned with this department; never before has it been excuse for exaction of a fee by the honorary staff. The motion is, in fact, far too comprehensive, it was not adequately studied, it is calculated to raise acute discussion between the staff and their committee, and it deals a deadly blow to that voluntary system which the meeting pledged itself almost unanimously to support. I had previously forwarded to the Medical Secretary, and endeavoured in vain to move, an amendment as follows:

> The honorary medical staffs of voluntary hospitals should treat without charge all hospital patients except (1) those on behalf of whom payment is made out of rates or State funds; and (2) those who, in the opinion of the Hospital Committee, are able to contribute a sum beyond that required for maintenance, and who are definitely accepted on that understanding as paying patients by that committee.

I claim for this amendment that it emphasizes the primary duty of an honorary staff, yet leaves them liberty to charge fees in certain cases which are clearly defined. Other classes might be added in great industrial centres, but, in absence of definition, there will be much scope for disagreement. At the Royal West Sussex Hospital we have, until this year, been solvent on the voluntary system, and hope to recover this position without special rate or State aid. The secretary asks every patient, or those responsible for him, to subscribe something, if he can afford it, according to his means. We do not yet take "paying patients," though we meditate doing so. The patients are not of that class, and the honorary staff have no desire to share in these voluntary maintenance fees. No doubt many other hospitals staffs are similarly minded, yet the Leicester motion would compel them to do this thing. Now the honorary character of the staffs of hospitals has hitherto been of the utmost assistance to their committees in raising voluntary subscriptions and donations; if these officers are to be paid for nearly every patient, clearly they must drop altogether the title "honorary," the consequences to the funds of hospitals will be quite disastrous, and the relation of the staff to the still "honorary" committee will be radically altered, and that entirely for the worse. It is idle to plead that this payment will be small, and to call it an "honorarium." The sum may or may not be small, experience has shown that such demands are apt to grow, but anyhow the principle involved is great, and it is certain that committees will not regard as "honoraria" sums extorted from them against their will as a commission on the funds which they receive.

Equally futile is the plea that this money may be devoted to various admirable purposes. Precisely the same excuse was advanced before appropriating fees due from county councils, yet what fraction of those fees has been assigned to such aims? I do not blame the staffs for pocketing the money duly earned, but it had been better to have put forward no other intention from the first. Such programmes will hardly gain credence a second time, when already speakers, quite unblushingly, counted their unhatched chickens for distribution among junior members of the staff. Yet, ethically, how can the staff, who do nothing for maintenance as distinct from treatment, levy toll on sums voluntarily subscribed, whether by patient or other party, for the former purpose? I would prefer to this the frank condemnation of the whole voluntary system so ably urged by Dr. Peter Macdonald. The logic of his speech was admitted to be unquestionable, but his motion was rejected almost unanimously on the score of sentiment. Yet this same conference, shortly after, by a majority almost equally overwhelming, approved the motion of Leicester, crudely unsentimental, indeed mercenary as it was, on the score of logic!—I am, etc.,

Chichester, Dec. 25th, 1920. G. C. GARRATT.

STASIS AND THE PREVENTION OF CANCER.

SIR,—In his presidential address to the Hunterian Society, reported in your issue of December 25th, 1920, Dr. Jordan refers, for the second time in three months in the columns of the medical press, to one of my "medical notes" which appeared recently in *St. Bartholomew's Hospital Journal*, and criticizes the note adversely. I refrained from replying upon the former occasion because Dr. Jordan placed me in an obvious dilemma: he spoke of me as a "well-known physician," but did not name me; nor does he name me now. But this second and fuller reference invites a brief rejoinder, and I make it in the assurance that Dr. Jordan is as much mistaken in his compliment as I believe him to be in his criticism.

Dr. Jordan says that I wrote "somewhat" as follows—the note was quite short, so that it puzzles me to understand why it should not be quoted exactly—"Cancer of the stomach comes generally 'out of the blue,' with no preceding history of gastric trouble." Although that is not what I said, it is certainly what I meant, and Dr. Jordan's "argument" by no means leads me to disavow it. His argument resolves itself into a simple statement that "radiological investigation reveals incontrovertible evidence of long-standing disorder." Then follows the recital of the case of "a lady," suffering from gastric cancer, who, on "careful questioning," admitted that "she had always been inclined to biliousness and constipation," and whose examination revealed "an enormously elongated pelvic colon," with "a caecum firmly impacted in the pelvis," and "filled with hard faecal masses firmly pressed into the wall of the rectum." The reference which such a state of things bears to the "preceding history of gastric trouble," which I said was not usually present in cases of gastric cancer, is not very clear.

When I wrote the note referred to I had in mind only my own experience. On reading Dr. Jordan's second somewhat scornful criticism I turned up the subject in some standard articles by really well-known authorities, to find (as is so often the case) that there was nothing at all original about my "note." I append the first four references which I came across. "It is not probable that previous disease has any influence whatever in the causation of (the) cancer" (Osler). "There is no evidence that chronic indigestion leads to cancer of the stomach" (Hale-White in *Allbutt's System*). "It (that is, the cancer) frequently happens in those who have been hitherto quite healthy, and is not determined by any previous disease" (Frederick Taylor). "There is no definite information which leads us to suppose that gastritis leads to carcinoma; in fact, *in a large proportion of cases the development of cancer is almost sudden in the midst of complete health*" (Charles F. Martin in *Osler and McCrae's System*). I did not proceed further with my researches into the literature of the subject.—I am, etc.,

London, W., Dec. 26th, 1920. THOMAS HORDER.

THE MINISTRY OF HEALTH AND THE PROFESSION.

SIR,—A section of the lay press is still continuing its attacks on the Ministry of Health by methods such as those on which you commented in your leading article of December 4th. In so far as this represents a genuine attack on the policy of the Government or the methods of the Minister the politicians concerned may be left to look after their own case. But it becomes evident that there is, as you hinted in your article, an attempt, influenced mainly by the tactics of party warfare, to undermine the position and machinery of the Ministry itself, and to discredit those of our own profession who are attached to it, and who, as civil servants, are precluded from making their own reply. In this respect the medical profession, as the custodian not merely of its own reputation and status but also of the interests of the community in relation to

health, is vitally concerned with the controversy, and it is to be hoped that the Association at least will hasten to make its influence felt.

The profession, with the Association as its mouthpiece, was largely instrumental in securing the establishment of the Ministry, in defining its objects, and in determining its powers and its character. We succeeded in impressing on the Government and on public opinion that the care of the health of the whole community was matter for a first class department of State, that in such a Ministry the status and power of the medical side was at least as important as that of the lay side, and that only by the complete, or almost complete, unification of the health administrative service could ultimate success be assured. The provisions of the Act establishing the Ministry, and the arrangements made in building up its organization and personnel, secured these things, as it seemed, on a firm foundation. In Sir Robert Morant and Sir George Newman, given equal status in the Ministry, the public had servants capable of formulating a health policy for the country which, though it might take decades to carry out, and however it might be modified by adequate professional and public discussion, would be such as could not fail to secure in the long run those national results for which the profession has long been striving and the enlightened public aspiring after. These results are now in real danger and even the basis is becoming insecure.

So to limit the powers of the Ministry and so to narrow its possibilities as to reduce it to the level of a secondary department; so to subordinate its medical side as to place it in a position of inferiority to the lay administration; so to bolster up the isolated medical work of other Ministries as to prevent the unification of national health administration under one central body, appear to be the objects aimed at. I judge, however, that if there is one thing which the medical profession will not tolerate, it is a recrudescence of the old situation in which medical and health matters languished under the Local Government Board and half a dozen other departments, where the representatives of the profession were for the most part the scullions of an unenlightened bureaucracy mainly interested in other concerns.

The health of the nation is a big enough affair for a first-class Ministry. It has been part of our policy that other matters should go, as some have already gone, from the Ministry of Health. It is part of our policy, too, that as soon as may be the medical side of the Poor Law administration shall be separated from the purely assistance side, that the health work of the Ministry of Pensions and of the Board of Education should be treated as integral parts of a unified health administration. In a Ministry of this type it would necessarily follow that public health would be one of the prime concerns of the nation, and that the medical profession would take its proper place in formulating, guiding, and carrying out a considered national health policy. Already the masterly memoranda and reports of Sir George Newman and the reports of the senior medical officers under him, have shown us in outline a policy which, though in many respects not immediately practical because of financial and other considerations, demonstrates a grasp of the relationship between medical education, preventive medicine, and curative medicine, between the work of the general practitioner as the base of all and that of the specialist, the research worker, and the administrator as his essential helpers, such as had never yet been placed before the profession and the public.

It is a calamity that at this early stage of its life the work of the Ministry, after the tragedy of the death of its great first secretary, should be hindered by the reluctance of health workers in other departments to associate themselves with it, should be prejudiced by the imperfect methods of the first Minister nullifying his excellent intentions, and should now be stultified by some of the important conclusions and suggestions of its medical side being blocked even from consideration by the action of lay administrators and political wire-pullers.

Again, may I urge the Association and the profession to exert all the pressure that they can towards supporting and completing the reforms on which the national health and well-being so absolutely depend?—I am, etc.,

Hornsey, Dec. 20th, 1920. H. B. BRACKENBURY.

X RAYS FOR RINGWORM: THE RISK OF BALDNESS.

SIR,—The increasing number of claims against medical practitioners in respect of permanent alopecia following upon the treatment of ringworm of the scalp by *x* rays renders it desirable that those who may have occasion to use that method of treatment should warn the patient's parents of the possible after-effects.

The violent reaction which occasionally follows even minimum doses of *x* rays, in spite of all precautions, is otherwise apt to create a suspicion of overdosage or negligent technique, and give rise to claims which might have been avoided by a preliminary word of caution.—I am, etc.,

JAMES NEAL,
General Secretary, Medical Defence Union, Ltd.
4, Trafalgar Square, London, W.C.2, Dec. 23rd, 1920.

THE RISKS AFTER OPERATION FOR TONSILS AND ADENOIDS IN OUTDOOR CLINICS.

SIR,—I was pleased to read Mr. E. Watson-Williams's article in the JOURNAL of December 11th and grateful to him for having brought forward this important subject.

All are agreed that the removal of tonsils and adenoids is an operation by no means devoid of post-operative sequelae, and yet for years the practice of their removal in the out-patient clinics has persisted. The lack of in-patient accommodation has been given as a reason for this unscientific and in many cases dangerous procedure, but do we really consider that this justifies the performance of the operation at all under such conditions?

I would go further and say that no hospital should undertake these cases unless it can provide some sort of after-care and treatment. Tonsils and adenoids are the causative factors in so many derangements of the ear, nose, throat, and of general development, that their removal under proper conditions is of primary importance.

No operation gives such speedy good results if performed thoroughly and in suitable surroundings, and *au contraire*, I might say no operation has been the cause of so much disrepute because of inefficient removal and after-care.

Holding these views, and having repeatedly received just letters of complaint from parents, I have recently approached the board of management at Ancoats Hospital, with the result that a few beds have been set aside in an observation ward, so that these cases can be under observation for at least twenty-four hours.

I admit that twenty-four hours is little enough, but it at any rate allows the child to recover in a good measure from the effects of the anaesthetic and operation, permits of the observation and treatment of haemorrhage, and further, the child can return home during the daytime rather than in the night air.

In conclusion I would urge that hospitals undertaking these cases accept their responsibilities, and try to put this operation on a more scientific footing by providing efficient accommodation for temporary after-treatment or observation.—I am, etc.,

F. HOLT DIGGLE,
Honorary Aurist and Laryngologist to Ancoats Hospital, Manchester, and to the Manchester Board of Guardians.
December 20th, 1920.

VENEREAL DISEASE PROPHYLAXIS.

SIR,—Dr. H. B. Gladstone's letter on this subject in your issue of December 11th, 1920, entirely ignores the problem of the unchaste as it exists at the present moment. He relies on such phrases as "I do not doubt" and "it is probable" to carry conviction, and proposes to leave his so-called "vicious men" in ignorance of simple knowledge that would almost certainly prevent them contracting horrible diseases that not only may cause them much misery and pain, and perhaps an early death, but which they may also hand on to their future wives and children. I claim that such conduct is false to any ethical code.

I wonder whether Dr. Gladstone realizes the proportion of young men that he thus proposes to sacrifice to a cruel blind puritanical bias? Certainly half the adult unmarried male youth of this country, probably much more than half. The section of the community that would be included in Dr. Gladstone's "vicious" class would certainly contain the majority of those who preserved our country's freedom in many hard-fought fights by sea and land during the late

war—men who were ever willing to make the supreme sacrifice at the call of duty. To say that such a hero is "vicious" because he has occasionally been carried away by his virile and natural appetite is a monstrous calumny.

It is only possible to pity the "morally strong" section of Dr. Gladstone's classification, whose "high moral tone" "you cannot fail to weaken" by teaching that disinfectants do really disinfect.

That "the moral fibre of the nation would be undermined" by a knowledge that the occurrence of venereal disease could be prevented in men by the immediate application of a solution of potassium permanganate 1 in 1,000, nobody but a very few fanatics can be so bold as to state as a serious proposition, whereas the converse, that the health of the nation would be greatly improved by such knowledge, can hardly fail to be admitted by those who have attempted an exhaustive study of the subject.

All will agree in the value of such societies as the Alliance of Honour for keeping well taught and well disciplined youths and maidens in the paths of sexual morality, and all will wish every success to similar organizations for educating the child and adolescent in self-control. But what about the incontinent *adult* of *to-day*? Is he to be permitted to contract and pass on an infection that can be prevented by immediate disinfection? Is scientific knowledge that can prevent to be withheld for a generation until purity leagues have had time to endeavour to prove results—results that "it is probable" will be negative?

The point is whether a possible but uncertain slight increase in clean sexual licence would be a worse thing for our country than the present terrible plague of venereal disease, which is increasing, and which, as one of the first of killing diseases, is filling our lunatic asylums, our blind schools, and our hospitals, and is accountable for more distress of mind than all other diseases put together.

The note published by the Medical Women's Federation in your issue of December 18th, 1920, appears to be entirely uncalled-for, as I believe that every member of the Society for the Prevention of Venereal Disease will agree with their headings "(*a*), (*b*), (*c*), (*d*)"; but as no one previous to this note, so far as I am aware, has ever raised such an ugly bogey, why raise it only to knock it down with so much energy?

The "directions for women" are "issued only by request" by the Society for the Prevention of Venereal Disease at my discretion as the honorary secretary, and are *not* issued broadcast; they are intended for the use of prostitutes, and for distribution by medical women and health workers in touch with prostitutes, either professional or amateur.

The policy of the Society for the Prevention of Venereal Disease is clearly stated in the first affirmation of our letter in your issue of December 4th, 1920, emphasizing "the efficacy of immediate self-disinfection *in the male* as a prevention against venereal infection and the possibility of almost eradicating these diseases by this means."—I am, etc.,

London, W., Dec. 20th, 1920. H. WANSEY BAYLY.

SIR,—As a medical woman and a member of the executive committee of the Society for the Prevention of Venereal Disease, I wish to protest most strongly against the communication by the Medical Women's Federation which appears in your issue of December 18th, 1920. It is calculated to give an utterly wrong impression of the aims and methods of the Society for the Prevention of Venereal Disease; only entire ignorance of the policy of the society can explain or excuse this extraordinary communication.

It is regrettable that a body of educated women should allow themselves to be involved in so serious a controversy without first verifying the accuracy of their information.

It is true that the "note" issued by the Federation does not say in so many words that the paragraphs marked "(*a*), (*b*), (*c*), (*d*)" are criticisms of the instructions issued by the Society for the Prevention of Venereal Disease, but there is no other interpretation possible. On behalf of the Society I repudiate the suggestions put forward in these paragraphs. The references to instructing young boys and girls even before puberty, and those that refer to teaching women—not even excepting a bride—to regard their husbands as possible sources of infection, are altogether unjustifiable and revolting. The Society has not issued any instructions capable of such interpretation, nor does it propose to do so.

The question of contraceptives does not concern us here, since the information on immediate self-disinfection given by the Society is for the use of men, and for those women who, by reason of their mode of life, tend to become a source of great danger to the community. Such women do not, as a rule, become mothers, nor is it desirable that they should, since their offspring are not likely to become good citizens, or to add to the health of the nation.—I am, etc.,

London, W., Dec. 21st, 1920. J. LORIMER HAWTHORNE.

MUSCLE RE-EDUCATION IN INFANTILE PARALYSIS.

SIR,—From the controversy in the BRITISH MEDICAL JOURNAL under the above heading one gets, I think, a good example of how easily discoveries are lost sight of and after some time rediscovered. Several writers have shown beyond doubt—particularly Dr. Cyriax—that the principles and practice of muscle re-education in infantile paralysis is no new discovery born by the war, as proposed by Dr. Mackay, but has been known and practised by the Swedish school for many years. This may be put on the credit side for the Swedish school, and needs no further comment, except that one would have wished for the publication of their principles to have been kept abreast with modern investigations and findings.

When, however, Dr. Cyriax, in your issue of December 11th, states that "splinting is not essential in the treatment of infantile paralysis," and "that during the last seventy years the Swedish school have treated this disease without splinting," I for one, as a pupil of that school, must emphatically protest, as I entirely disagree with that view. Further, I do not believe Dr. Cyriax is voicing the opinion of the main bulk of the Swedish school when he makes that statement, but is rather giving the opinion of a minority with extreme views on the subject. If he was, I think it would be most regrettable, as it would show that in spite of rational and advanced views on one hand, they would have shut their eyes to other therapeutic measures of equal importance and ignored the teaching of sound physiological principles which investigation and experience have shown beyond doubt to be correct. Moreover, it is indeed difficult to understand this aversion in some quarters to splinting in bad cases, as the physiological reason for splinting is closely allied to the guiding principle in re-education of paralysed muscles. Take, for example, the case of drop-foot from paralysis of the anterior tibial group of muscles. On the one hand the splint, by bringing about what might be called a passive shortening of the dorsiflexors and stretching of the antagonists, mechanically keeps the foot in a position the active maintenance of which will ultimately constitute complete recovery of the now paralysed muscles. On the other hand, the same position is used as a starting-point for re-educative movements. With this the Swedish school, as voiced by Dr. Cyriax, seem to agree. Now, however, comes the difference. The modern surgeon, who generally favours manipulative treatment, including re-educative movements, removes the splint for that purpose, being careful, however, not to permit, even for a short while during treatment, the foot to hang limp, in order to prevent any overstretching of paralysed muscles. Dr. Cyriax in using the same treatment, but by applying no splint in the interval, permits the foot to hang limp all day and all night, and only during treatment once or twice a day brings it up to the position he hopes the muscles themselves will be able to maintain one day.

If "the rule of the Swedish school has always been to place the affected limb in that position from which the greatest sign of muscular activity were obtainable," why, may it be asked, is not this position artificially maintained during the twenty-three hours of the twenty-four when the limb is left to itself and no treatment is being given? The individual muscle fibre, just recovering its tone, must surely find a great relief in being spared the irritating influence of being overstretched. Why should not this relief be given continuously, instead of only for a short while during the day? If good results have been obtained without splints, one can only infer that those cases were

particularly favourable to recovery; everybody of experience knows, of course, that some cases will recover without any treatment at all, and often in spite of what is being done to them; this is Nature's kind way. It is the severe cases that should serve as a test, and who but Dr. Cyriax will deny that in these cases a combination of splinting with physical and re-educative methods will quickest lead to recovery where recovery is possible?

I cannot believe that the foremost originator of the movement cure meant other therapeutic methods to be cast aside as not being worth considering; if he did he made, as far as I can see, a serious mistake, which it behoves his followers who know better to correct. The Swedish treatment will lose nothing by being used in conjunction with other methods; on the contrary, it will gain more professional, as well as public, confidence; and what is still more important, the patients will derive benefit from the intelligence of several brains instead of only one.
—I am, etc.,

London, N.W. Dec. 19th. C. WESTMAN.

TUBERCULOUS MILK.

SIR,—I have been requested to send you the following resolution for publication, which summarized a discussion of sixteen tuberculosis officers and institution superintendents:

> That this conference of the medical staff of the Welsh National Memorial Association unanimously affirm as their view that the distribution of milk containing tubercle bacilli is fraught with danger to the lives and health of children consuming it, and that the hypothesis that tubercle bacilli consumed in milk may produce a degree of immunization is no reason for the abatement of any efforts directed towards producing a tubercle-free milk.

—I am, etc.,

JAMES C. GILCHRIST, M.D.,
Welsh National Memorial Association, Tuberculosis Institute, Cardiff, Dec. 21st, 1920. Honorary Secretary.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a Congregation held on December 17th, 1920, the following medical degrees were conferred:

B.M.—C. K. J. Hamilton, W. F. Skaife, J. T. S. Hoey, I. Harris.

UNIVERSITY OF CAMBRIDGE.

AT a Congregation held on December 18th, 1920, the following medical degrees were conferred:

M.D.—A. L. Sutcliffe.
M.B., B.CH.—F. Moor, W. D. Newcomb, H. R. Pollock, G. E. Spicer, E. W. Todd, A. C. Halliwell, W. S. R. Thomas.
M.B.—A. C. M. Coxon.
B.CH.—J. W. Stretton, C. B. Clarke.

The following candidates have been approved at the examinations indicated:

THIRD M.B., B.CH.—*Part I, Surgery and Midwifery:* C. G. Ainsworth, A. B. Appleton, C. S. Atkin, A. B. Bratton, W. M. Casper, M. T. Clegg, B. K. T. Collins, S. J. Cowell, F. C. Cozens, E. J. Crisp, E. C. Curwen, H. B. Dodwell, E. A. Fiddian, L. P. Garrod, H. L. Garson, W. N. Goldschmidt, E. H. H. Granger, C. Griffith-Jones, J. C. N. Harris, G. A. Harrison, F. B. Hobbs, L. W. Jones, E. I. Lloyd, W. H. Palmer, H. A. A. Pargeter, F. P. N. Parsons, P. W. Putnam, R. S. Scott, T. H. Somervell, E. D. Spackman, G. D. C. Tracy, A. R. Walker, T. T. B. Watson, A. D. Whitelaw, V. Wilkinson, M. Wong, F. G. Wood, W. G. Woolrich, H. B. Yates, K. J. Yeo.

Part II, Medicine, Pathology, and Pharmacology: C. G. Ainsworth, F. Allen, J. C. Andrews, C. S. Atkin, S. H. Barnett, D. C. Beaumont, C. C. Beney, P. F. Bishop, C. N. Carter, P. D. H. Chapman, A. O. Courtis, S. J. Cowell, L. Cunningham, H. B. Dodwell, W. D. Doherty, H. V. Edwards, L. S. Gathergood, A. C. V. Gosset, E. H. H. Granger, J. R. Harris, G. A. Harrison, F. B. Hobbs, L. W. Jones, J. M. Lawrie, P. Lazarus-Barlow, F. S. Maclean, J. W. McK. Nicholl, E. S. Orme, R. Y. Paton, C. J. Penny, K. Playfair, J. L. Potts, W. B. Purchase, G. P. N. Richardson, A. G. Shurlock, F. N. Sidebotham, J. A. B. Snell, F. V. Squires, W. S. Sykes, D. C. L. Vey, H. N. Webber, A. T. Westlake, A. D. Whitelaw, J. Whittingdale, V. Wilkinson, F. B. Winfield, W. G. Woolrich.

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—*Part I, Physics and Electrotechnics:* W. Bell, T. I. Candy, W. H. Coldwell, T. J. A. Connolly, H. T. Cubbon, J. P. S. Dunn, A. H. Gregson, R. N. Guthrie, J. B. Higgins, M. H. Knoch, R. S. Paterson, J. A. Wilson. *Part II, Radiology and Electrology:* W. Bell, J. P. Bracken, T. I. Candy, W. H. Coldwell, T. J. A. Connolly, H. T. Cubbon, A. H. Gregson, R. N. Guthrie, J. B. Higgins, R. S. Paterson, F. G. Rose.

On the recommendation of the Committee on Medical Radiology and Electrology, the diploma in Medical Radiology and Electrology has been granted to Sir A. D. Reid, K.B.E., C.M.G., R. W. A. Salmond, O.B.E., H. Martin Berry, J. F. Hall-Edwards, J. T. Case, M.D.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examinations indicated:

M.D.—*Branch I (Medicine):* M. Barar.ov, S. Batchelor, W. M. Feldman, E. E. Herga, K. R. Hill, G. C. Linder, R. J. Perkins, E. D. Scott, J. A. Torrens. *Branch IV (Midwifery and Diseases of Women):* H. W. Evans, Violet I. Russell. *Branch V (State Medicine):* M. Radford. *Branch VI (Tropical Medicine):* G. A. S. Madgwick, E. S. Phipson (University Medal).
M.S.—*Branch I (Surgery):* H. E. Griffiths, R. L. Horten (University medal), S. W. M. Jones, N. L. M. Reader, C. S. L. Roberts, H. J. D. Smythe, D. G. C. Tasker.

UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examinations indicated:

THIRD M.B., CH.B.—*General Pathology and Morbid Anatomy:* R. S. van Aalten, P. D. Abbatt, R. Anderton, J. H. Appleton, *Mary W. Atkinson, J. B. Bennett, Doris H. Bentham, B. Broman, G. H. Buckley, E. W. Clough, H. M. Coope, Margaret Derbyshire, O. M. Duthie, Kathleen M. Eastwood, Beatrice L. Ellison, H. E. Emmett, H. P. Fay, J. H. Fletcher, W. Geraghty, Doris M. Hardman, A. Ingham, E. L. Jones, J. I. Kelly, Nora Mills, Winifred H. Mitchell, Louis Morgenstern, A. C. Newman, Hilda Pratt, G. T. Robinson, A. Rosenstone, F. H. Scotson, H. Southworth, G. B. Stenhouse, L. Unsworth, Emmeline Wade, Margaret J. Warburton, Margaret Wild, J. Worthington, J. Yates. *Pharmacology and Therapeutics:* Margaret Derbyshire, Gwendolen A. G. Edwardes-Evans, †R. Handley, G. A. Lord, L. Morgenstern, Margaret J. Warburton. *Hygiene:* L. Boyars, R. Handley, L. W. Kay, G. B. Lord, L. Morgenstern. *Forensic Medicine:* R. J. Allison, Caroline M. Edwardes-Evans, C. Nelson, H. D. Preston, S. J. Woodall.

* Awarded distinction in Pathology.
† Awarded distinction in Pharmacology.

FINAL M.B., CH.B.—F. H. Anderson, May Blakiston, Phyllis M. Congdon, J. W. Crawshaw, A. M. El Aguizy, Florence M. L. Graham, E. M. Greaves, A. Haworth, G. E. Hayward, Irma M. C. Jehansart, A. W. Kirkham, J. Leather, G. H. Lees, Gertrude B. Leigh, ‡§P. B. Mumford, T. O'Brien, Florence G. Sherry, Doris A. Taylor, H. Tomlinson, R. Williamson. *Medicine:* Martha F. Barritt, Violet M. Jewson. *Obstetrics:* T. E. Coope.

‡ Awarded second-class honours.
§ Awarded distinction in Obstetrics and Surgery.

The Services.

HONOURS.

THE following appointments to the Order of the British Empire are announced:

C.B.E. (Civil Division): Surgeon Commander Thomas William Myles, R.N. *O.B.E. (Civil Division):* Surgeon Lieutenant James Dorrington Bangay, R.N.

Medico-Legal.

SUICIDE AND THE WORKMEN'S COMPENSATION ACT.

IN a case which was heard recently at Greenwich County Court a claim for compensation was made by a woman whose husband was killed on a railway. The defence was that he had committed suicide by throwing himself in front of a train which was coming into the station. The engine driver gave positive evidence to the effect that he had seen the deceased deliberately take two steps towards the edge of the platform and then deliberately throw himself in front of the engine when it was a few yards away. In the light of this testimony—there being no evidence on the other side as to how the man came to be on the rails—the judge said he was bound to hold that death was not caused by accident arising out of and in the course of the employment, and gave judgement for the employers.

The decision is interesting, because at the inquest which had been held on the deceased the coroner found a verdict of accidental death. It is not to be supposed, however, that the defence of "suicide" will always succeed in answer to a claim under the Act. In another case of recent date the Court of Appeal decided that where a workman commits suicide by reason of insanity resulting from an accident arising out of and in the course of his employment, his dependants are entitled to compensation if the suicide was a result of the accident and not a result of the brooding over the injury received. In that case a medical specialist had expressed the opinion that he was suffering from insanity. In his opinion the accident had given the man a shock, and the shock and suffering had resulted in melancholia, which had been the first stage of insanity. In his view the melancholia, resulting from the accident, left no doubt as to the cause of insanity.

Medical News.

DR. C. OWEN FOWLER, president of the Surrey Branch of the British Medical Association, has been appointed a magistrate for the Borough of Croydon.

DR. A. G. NEWELL of Harringay, a vice-president of the Medico-Political Union and chairman of its Finance Committee and vice-chairman of its Executive Committee, informs us that he has resigned from that Union, owing to his opposition to certain lines of policy.

DR. T. R. LLEWELLYN, on the occasion of his leaving Penygraig, near Pontypridd, to take up an appointment of regional officer under the Ministry of Health, has been presented by his friends with gifts to the value of £400, including a medical dressing case, and a diamond wristlet watch to Mrs. Llewellyn.

AMONG the Friday evening discourses to be given at the Royal Institution of Great Britain, 21, Albemarle Street, W.1, is one on February 4th at 9 p.m., by Professor A. D. Waller, M.D., F.R.S., on the electrical expression of human emotion. The lecture programme includes a course of four lectures to be delivered on February 22nd, March 1st, 8th, and 15th by Professor Arthur Keith, M.D., F.R.S., on Darwin's theory of man's origin in the light of present-day evidence.

DR. THOMAS FAWSITT of Oldham was recently entertained by his medical colleagues at dinner in commemoration of his retirement after fifty years' practice. The function was arranged under the auspices of the Oldham Medical Society.

DR. FRANK HEWKLEY, vice-president of the League of Mercy, has been awarded the Order of Mercy.

DR. JOHN MCGIBBON, lecturer in midwifery and gynaecology in the Edinburgh Extramural School, has been appointed professor of midwifery in the University of Johannesburg, South Africa.

THE annual general meeting of the Medical Officers of Schools Association was held at 2, Savoy Hill, Victoria Embankment, W.C.2, on December 17th, 1920. Mr. R. C. Elmslie was elected president, and thanks were accorded to Dr. James Kerr, the retiring president. It was agreed to continue publication of the journal, *School Hygiene*, and Drs. James Kerr and C. W. Hutt were elected editors.

THE Aldred Lecture before the Royal Society of Arts on Wednesday, January 12th, at 8 pm., will be given by Dr. C. S. Myers, F.R.S., Director of the Psychological Laboratory, and Lecturer in Experimental Psychology, University of Cambridge. The subject is "Industrial Fatigue."

THE officers of the 29th General Hospital, stationed at Salonica during the war, held their second annual Reunion dinner at the Queen's Hotel, Manchester, on December 11th, 1920, Lieut.-Colonel S. H. Withers, C.M.G., R.A.M.C.(R.), presiding. There was a large and enthusiastic company present, including Colonel Sir Wm. Thorburn, K.B.E., C.B., C.M.G., Colonel R. J. Kelly, C.B., Lieut.-Colonel W. Thompson, Lieut.-Colonel H. T. Fairbank, O.B.E., D.S.O., Major J. Arnold Jones, O.B.E., Major A. Corsar Sturrock, Major Wm. Stewart, Major Webster and Captain A. Percy Groves.

ON the occasion of his eighty-fourth birthday Dr. W. W. Keen will be entertained at dinner and presented with his bust by a number of medical, scientific, and civic organizations, and by friends in Philadelphia and other cities.

AS will be seen by an advertisement elsewhere, the Indian Government is inviting applications for two Tata professorships at the School and Hospital of Tropical Medicine about to be established in Bombay. The selection of the candidates for the two chairs—the first in clinical medicine and therapy, and the second in protozoology—has been placed by the Indian Government in the hands of the Tropical Diseases Committee of the Royal Society. The appointments are whole-time, and are made in the first instance for five years, but may be extended by the Indian Government, on the recommendation of the governing body of the school. A condition with regard to salary is rather unusual; the offer is of 1,500 to 5,000 rupees a month, according to the scientific standing of the candidate. There is no pension. If the appointment is renewed the incumbent will be entitled to furlough for six months out of India on full pay, and so thereafter for each period of five years. The incumbent may also be able to obtain study leave on furlough pay for six months out of India.

A THREE months' course of lectures and demonstrations in hospital administration for the diploma in public health will be given by Dr. R. M. Bruce, medical superintendent, at the Western Hospital, Seagrave Road, Fulham, on Tuesdays and Fridays, at 5 p.m., beginning on Tuesday, January 4th. The fee for the course is £3 3s., and payment should be made beforehand to the Metropolitan Asylums Board.

ON Saturday, December 11th, 1920, in the Hotel Majestic, the annual oration of the Harrogate Medical Society was delivered by Sir Berkeley Moynihan, K.C.M.G., C.B., on the subject of gastric ulcer. Many illustrative lantern slides of radiographs were shown, some of which were unique. The President, Mr. Herbert Frankling, C.B.E., and over 80 members of the Society and other guests, including members of the nursing profession, were present.

DR. R. L. GUTHRIE, O.B.E., has been appointed His Majesty's coroner for the Eastern District of the County of London.

LAST summer a request was received from the Council of the National Institute for the Blind for permission to publish in Braille, for the use of blind students of massage, certain articles appearing in the BRITISH MEDICAL JOURNAL. In making the application, which was readily granted, the aim of the Council of the Institute was to help its students to have as far as possible the same opportunities as sighted persons for keeping in touch with subjects likely to be of benefit to them in their work as masseurs. Mr. J. Lloyd Johnstone, M.R.C.S., librarian of the Institute, now informs us that some half-dozen papers have been reproduced in Braille and are kept for use in the library of the institute. Among these are Dr. Wilfred Harris's lecture on chronic paroxysmal trigeminal neuralgia, Dr. R. G. Abercrombie's note on physiopathic paralysis of the hand, and Dr. Charles Mackay's paper on the place of muscle re-education in the treatment of anterior poliomyelitis.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

HIGH MYOPIA.

"OCULUS" has a case of a boy, aged 10½ years, with a large patch of old choroidal atrophy in the macular region of the right eye and myopia of 10 D in the left. Visual acuity amounts to R. $\frac{6}{60}$ not improved by glasses, and to L. $\frac{6}{12}$ improved to $\frac{6}{6}$ by −10 D sph. The myopia in the left eye is evidently increasing. In view of the risk of increase of myopia, separation of the retina, etc., in the left eye, how is the boy's education to be continued? Would such a case be received into a school for the blind, or are there any special schools for myopes to which he could be sent? "Oculus" asks for information with regard to schools or classes for myopes suitable for such a case.

*** The youth of this child, the serious defect of the eyes—amounting to loss of the central vision of the right and poor vision in the left—make it dangerous for education to be carried on at an ordinary school. There are many classes for

children with high myopia now established in connexion with the elementary school system, and working after the model inaugurated in London. This scheme of education can be secured in some public schools by favour of the head masters. Mr. Bishop Harman, who has oversight of the London blind schools and myope classes, informs us that this boy would not be admitted to a myope class, but entered for a blind school. His vision would be too bad to do the work of the myope class, and the grave risk of further deterioration of vision makes it necessary that the boy should learn Braille at a time when he can do it with the greatest ease; so that, should the worst be realized, he would have command of the recognized means of communication amongst the blind, and of a full literature.

INTELLIGENCE TEST.

"J. A. M."—We understand that the most satisfactory apparatus for carrying out tests for mental deficiency is the test material for the measurement of intelligence devised by Mr. Ferman, Professor of Education, Leland Stanford Junior University. The material can be obtained from Messrs. H. K. Lewis and Co., Ltd., 136, Gower Street, W.C.1, price 3s. 6d. net.

INCOME TAX.

"A. H. G." inquires if the cost of a six months' post-graduate course in radiology can be treated as a professional expense in calculating the profits of his general practice including radiology.

*** We think not. The expense seems to represent outlay in improving his mental equipment, and is analogous to the expense of purchasing *additional* machinery or instruments.

"T. N. C." inquires whether the cost of replacement of a motor car is to be measured according to the original cost of the car displaced as a maximum.

*** We have dealt with this point before, and can only say here that the official evidence put before the Royal Commission by the Board of Inland Revenue justifies, in our opinion, a claim to the full cost of the replacement, provided that the car purchased does not cost more than the old car would have done in present circumstances.

"H. E. B." inquires as to the inclusion of certain income in the Schedule D return.

*** He can include the "regular salary as district medical officer" but not, as we think, the "pension for disturbance out of former office under the guardians"; in the latter case no expenses are chargeable against the income and there seems to be no reason, therefore, for departing from the strict legal procedure.

"A. M." asks if a medical practitioner can deduct (*a*) £500 spent in purchasing a "panel," and (*b*) the cost of purchasing a small car.

*** No; in both cases the cost represents an outlay of capital sunk by our correspondent in the purchase of a practice and equipment. The cost of *replacing* the car will normally be deductible as an expense of maintenance.

LETTERS, NOTES, ETC.

TREATMENT OF ERYSIPELAS.

DR. E. T. LARKAM (Birmingham) writes: Amongst the many fairly recent suggestions for the treatment of cutaneous erysipelas an old effective method by means of the local application of the *strong* solution of perchloride of iron (liq. ferri perchlor. fortis) has not, to my knowledge, been mentioned. In 1893, when a house-surgeon, I had to treat a virulent case following amputation of a toe; in four days the erysipelas had spread just above the knee, in spite of the application of ichthyol, painting a broad band of liquor iodi fortis above the upper limit of the disease, and the internal administration of large doses of tincture of perchloride of iron. I thoroughly painted the limb with the strong iron solution, continuing the painting two inches above the upper limit of the disease on healthy skin; at the same time I applied lint soaked in the iron solution and covered the limb with cotton-wool. This dressing was carried out twice daily. The erysipelas spread but slowly during the next forty-eight hours, and in three days became totally arrested. I have had many such cases since, including the so-called idiopathic facial variety, and have invariably used this remedy, with unfailing success.

POSTURE IN DEFAECATION.

"R. B. G." writes, with reference to Dr. D. de V. Hugo's communication (December 11th, 1920, p. 923), that he remembers an address given by Professor Chiene on "Movement in life," wherein he emphasized the benefit of what he called the "cuddy-hunker" position in defaecation as witnessed by him on the wayside in South Africa, with resulting large well-formed stools, as compared with the broken-up and ill-formed faeces of those who adopted the ordinary sitting posture on the modern closet. His advice was—"defaecate slowly" and "micturate slowly."

*** We are glad to say that Dr. Hugo was in error and that Emeritus Professor John Chiene, C.B., is still happily living in retirement in the Midlothians.

A TEAPOT STIRRER.

DR. LACHLAN GRANT (Ballachulish) has designed a simple means for obtaining a better and quicker infusion of tea in an ordinary teapot. This consists of an attachment of aluminium fixed to the inside of the cover of the teapot. By turning the knob of the lid the contents are agitated and the infusion is hastened. Thus the lid need not be lifted in order to stir up the contents with a spoon, nor need the teapot be waved about as some old-fashioned ladies used to do. The "stirrer" can be attached to teapots made of earthenware, porcelain, or metal. Teapots so fitted are, we understand, manufactured by Messrs. Gibson and Sons, Limited, Albany Potteries, Burslem, Stoke-on-Trent.

RABIES IN SOUTHERN INDIA.

THE annual report of the Director of the Pasteur Institute of Southern India, Coonoor, shows a further increase of 347 in the number of patients annually undergoing treatment for rabies; land has been purchased for the erection of two new lines of quarters—one for indigent and one for paying patients. In the year ending February 29th, 1920, six patients died from hydrophobia during the course of treatment; eight died less than fifteen days after the completion of treatment, and twenty-four more than fifteen days after the completion of treatment. The last are classed as failures, giving a rate of 0.75 per cent. The patients comprised 3,000 Asiatics, 100 Europeans, and 75 Eurasians.

THE DECLINE OF LATINITY IN FRANCE.

WE can only speculate as to the psychical reason that led the French to frenchify scientific terminology, more particularly in anatomy and pathology. Molière, it is true, brought medical dog latin into disrepute by his satire in *Le médecin malgré lui*, but the change into the vernacular took place so long after Molière poked fun at the mediaeval practitioner that they do not seem to stand in the relation of cause and effect. The explanation would no doubt be that it is much simpler to deal with French names than Latin, but it may be doubted whether the change is really of the nature of a simplification. It seems simpler to speak of the pudic nerve than the shameful nerve, the gluteal muscles than the buttocky muscles (*muscles fessiers*). The practice of naming operations and diseases after their supposed inventors is carried to an extreme in France, and such inventors are invariably, or almost invariably, French. The only exceptions we can recall are Bright's disease, Addison's disease, and, occasionally, Barlow's disease, but for the last named there is a Frenchman who has a reversionary interest. So far as we are aware, no other country has pushed Chauvinism to this degree in matters scientific, and we venture to hope that Latin will preserve its ascendancy. Owing to differences of pronunciation—in which we English are the greatest sinners—even Latin ceases to be a uniform spoken language, but it is universally understood when written. Be it remarked, however, that in France Latin is no longer compulsory, so that some present-day students, medical and pharmaceutical, are unable to tackle even a simple prescription in that classical language.

CORRECTION.

THE name of Mr. G. E. Elkington was incorrectly printed in the list of successful candidates for the diploma of F.R.C.S.Eng., published in our issue of December 18th, p. 956.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 29, 30, 32, 33, and 34 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 31 and 32.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line...	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.